GLOBAL
EDITION

Horngren's Financial & Managerial Accounting, The Financial Chapters

FIFTH EDITION

Tracie L. Miller-Nobles • Brenda L. Mattison • Ella Mae Matsumura

ALWAYS LEARNING

PEARSON

HORNGREN'S
Financial & Managerial Accounting
THE FINANCIAL CHAPTERS

GLOBAL EDITION

FIFTH EDITION

Tracie Miller-Nobles
Austin Community College
Brenda Mattison
Tri-County Technical College
Ella Mae Matsumura
University of Wisconsin-Madison

PEARSON

Boston Columbus Indianapolis New York San Francisco Amsterdam
Cape Town Dubai London Madrid Milan Munich Paris Montréal Toronto
Delhi Mexico City São Paulo Sydney Hong Kong Seoul Singapore Taipei Tokyo

Vice President, Business Publishing: Donna Battista
Senior Acquisitions Editor: Lacey Vitetta
Editorial Assistant: Christine Donovan
Vice President, Product Marketing: Maggie Moylan
Director of Marketing, Digital Services and Products: Jeanette Koskinas
Senior Product Marketing Manager: Alison Haskins
Executive Field Marketing Manager: Lori DeShazo
Senior Strategic Marketing Manager: Erin Gardner
Team Lead, Program Management: Ashley Santora
Program Manager: Mary Kate Murray
Team Lead, Project Management: Jeff Holcomb
Project Manager: Roberta Sherman
Supplements Project Manager: Andra Skaalrud
Associate Project Editor, Global Edition: Amrita Kar
Manager, Media Production, Global Edition: Vikram Kumar
Senior Manufacturing Controller, Production, Global Edition: Trudy Kimber
Operations Specialist: Carol Melville
Creative Director: Blair Brown
Art Director: Jon Boylan
Vice President, Director of Digital Strategy and Assessment: Paul Gentile
Manager of Learning Applications: Paul Deluca
Digital Editor: Sarah Peterson
Director, Digital Studio: Sacha Laustsen
Digital Studio Manager: Diane Lombardo
Product Manager: James Bateman
Digital Content Team Lead: Noel Lotz
Digital Content Project Lead: Martha LaChance
Full-Service Project Management and Composition:
Integra Software Services Pvt. Ltd.
Interior Designer: Jon Boylan
Cover Designer: Lumina Datamatics Ltd
Cover Art: © Singkham/Shutterstock
Printer/Binder: Lego Italy
Cover Printer: Lego Italy
Typeface: 11/13, Adobe Garamond Pro Regular

Pearson Education Limited
Edinburgh Gate
Harlow
Essex CM20 2JE
England

and Associated Companies throughout the world

Visit us on the World Wide Web at: www.pearsonglobaleditions.com

The rights of Tracie L. Miller-Nobles, Brenda L. Mattison and Ella Mae Matsumurato be identified as the authors of this work have been asserted by them in accordance with the Copyright, Designs and Patents Act 1988.

Authorized adaptation from the United States edition, entitled Horngren's Financial & Managerial Accounting, The Financial Chapters, 5th edition, *ISBN 978-0-13-385125-0, by Tracie L. Miller-Nobles, Brenda L. Mattison and Ella Mae Matsumurato, published by Pearson Education © 2016.*

ISBN-10: 1-29-211710-9
ISBN-13: 978-1-29-211710-2

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

10 9 8 7 6 5 4 3 2 1

Typeset in 11/13, Adobe Garamond Pro Regular by Integra Software Services Pvt. Ltd
Printed and bound by

About the Authors

Tracie L. Miller-Nobles, CPA, received her bachelor's and master's degrees in accounting from Texas A&M University and is currently pursuing her Ph.D. in adult learning also at Texas A&M University. She is an Associate Professor at Austin Community College, Austin, TX. Previously she served as a Senior Lecturer at Texas State University, San Marcos, TX, and has served as department chair of the Accounting, Business, Computer Information Systems, and Marketing/Management department at Aims Community College, Greeley, CO. In addition, Tracie has taught as an adjunct professor at University of Texas and has public accounting experience with Deloitte Tax LLP and Sample & Bailey, CPAs.

Tracie is a recipient of the Texas Society of CPAs Rising Star Award, TSCPAs Outstanding Accounting Educator Award, NISOD Teaching Excellence Award and the Aims Community College Excellence in Teaching Award. She is a member of the Teachers of Accounting at Two Year Colleges, the American Accounting Association, the American Institute of Certified Public Accountants, and the Texas State Society of Certified Public Accountants. She is currently serving on the Board of Directors as secretary/webmaster of Teachers of Accounting at Two Year Colleges, as a member of the American Institute of Certified Public Accountants nominations committee, and as chair of the Texas Society of CPAs Relations with Education Institutions committee. In addition, Tracie served on the Commission on Accounting Higher Education: Pathways to a Profession.

Tracie has spoken on such topics as using technology in the classroom, motivating non-business majors to learn accounting, and incorporating active learning in the classroom at numerous conferences. In her spare time she enjoys spending time with her friends and family and camping, kayaking, and quilting.

Brenda L. Mattison has a bachelor's degree in education and a master's degree in accounting, both from Clemson University. She is currently an Accounting Instructor at Tri-County Technical College in Pendleton, South Carolina. Brenda previously served as Accounting Program Coordinator at TCTC and has prior experience teaching accounting at Robeson Community College, Lumberton, North Carolina; University of South Carolina Upstate, Spartanburg, South Carolina; and Rasmussen Business College, Eagan, Minnesota. She also has accounting work experience in retail and manufacturing businesses.

Brenda is a member of Teachers of Accounting at Two Year Colleges and the American Accounting Association. She is currently serving on the board of directors as Vice President of Conference Administration of Teachers of Accounting at Two Year Colleges.

Brenda previously served as Faculty Fellow at Tri-County Technical College. She has presented at several conferences on topics including active learning, course development, and student engagement.

In her spare time, Brenda enjoys reading and spending time with her family. She is also an active volunteer in the community, serving her church and other organizations.

Ella Mae Matsumura, Ph.D. is a professor in the Department of Accounting and Information Systems in the School of Business at the University of Wisconsin–Madison, and is affiliated with the university's Center for Quick Response Manufacturing. She received an A.B. in mathematics from the University of California, Berkeley, and M.Sc. and Ph.D. degrees from the University of British Columbia. Ella Mae has won two teaching excellence awards at the University of Wisconsin–Madison and was elected as a lifetime fellow of the university's Teaching Academy, formed to promote effective teaching. She is a member of the university team awarded an IBM Total Quality Management Partnership grant to develop curriculum for total quality management education.

Ella Mae was a co-winner of the 2010 Notable Contributions to Management Accounting Literature Award. She has served in numerous leadership positions in the American Accounting Association (AAA). She was coeditor of *Accounting Horizons* and has chaired and served on numerous AAA committees. She has been secretary-treasurer and president of the AAA's Management Accounting Section. Her past and current research articles focus on decision making, performance evaluation, compensation, supply chain relationships, and sustainability. She coauthored a monograph on customer profitability analysis in credit unions.

Brief Contents

Contents

CHAPTER 1

Accounting and the Business Environment 25

CHAPTER 2

Recording Business Transactions 79

CHAPTER 3

The Adjusting Process 141

CHAPTER 4

Completing the Accounting Cycle 207

CHAPTER 5

Merchandising Operations 270

CHAPTER 6

Merchandise Inventory 348

CHAPTER 7

Internal Control and Cash 398

CHAPTER 8

Receivables 447

CHAPTER 9

Plant Assets, Natural Resources, and Intangibles 498

CHAPTER 10

Investments 547

CHAPTER 14

The Statement of Cash Flows 722

CHAPTER 15

Financial Statement Analysis 788

Changes to This Edition

General

Revised end-of-chapter short exercises, exercises, problems, continuing problems, comprehensive problems, and critical thinking cases.
NEW! Added three comprehensive problems in managerial chapters.

Chapter 1

NEW! Added discussion of the Pathways Commission and incorporated the Pathways' Vision Model.
Clarified and simplified the financial statement presentation.

Chapter 3

NEW! Added discussion of the new revenue recognition principle.
Replaced the word *prepaids* with *deferrals* to better align with the presentation of the other types of adjusting entries.

Chapter 4

Increased the usage of the classified balance sheet as a requirement for end-of-chapter problems.

Chapter 5

NEW! Added section on income tax expense and updated income statement presentation.

Chapter 9

Expanded the discussion on partial-year depreciation.

Chapter 11

NEW! Added a discussion on income taxes payable.
Updated the payroll section for consistency with current payroll laws at the time of printing.

Chapter 13

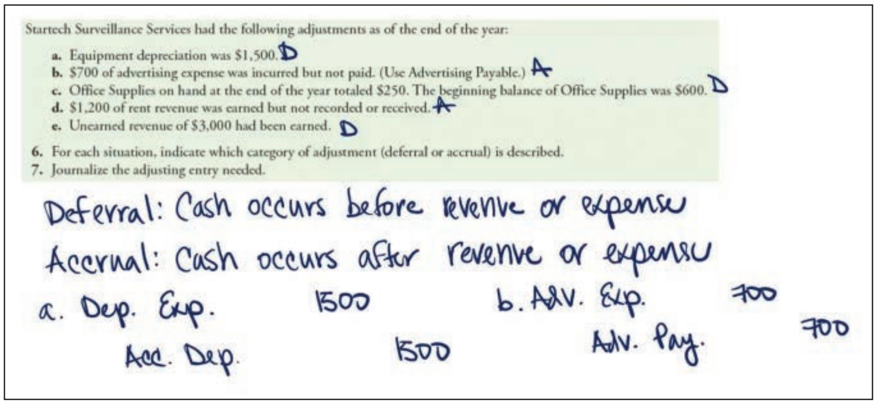
Moved coverage of treasury stock before dividends to increase students' understanding of dividend transactions.
Modified the presentation of dividends to match the material presented in earlier chapters (Chapters 1–4).

Financial & Managerial Accounting… Expanding on Proven Success

New to the Enhanced eText

The Enhanced eText keeps students engaged in learning on their own time, while helping them achieve greater conceptual understanding of course material. The worked examples bring learning to life, and algorithmic practice allows students to apply the very concepts they are reading about. Combining resources that illuminate content with accessible self-assessment, MyAccountingLab with Enhanced eText provides students with a complete digital learning experience—all in one place.

NEW! **Try It! Solution Videos**—Author recorded solution videos accompany Try Its! Just click on the Try It! box and watch the author will walk students through the problem and the solution.



Startech Surveillance Services had the following adjustments as of the end of the year:

a. Equipment depreciation was $1,500. D
b. $700 of advertising expense was incurred but not paid. (Use Advertising Payable.) A
c. Office Supplies on hand at the end of the year totaled $250. The beginning balance of Office Supplies was $600. D
d. $1,200 of rent revenue was earned but not recorded or received. A
e. Unearned revenue of $3,000 had been earned. D

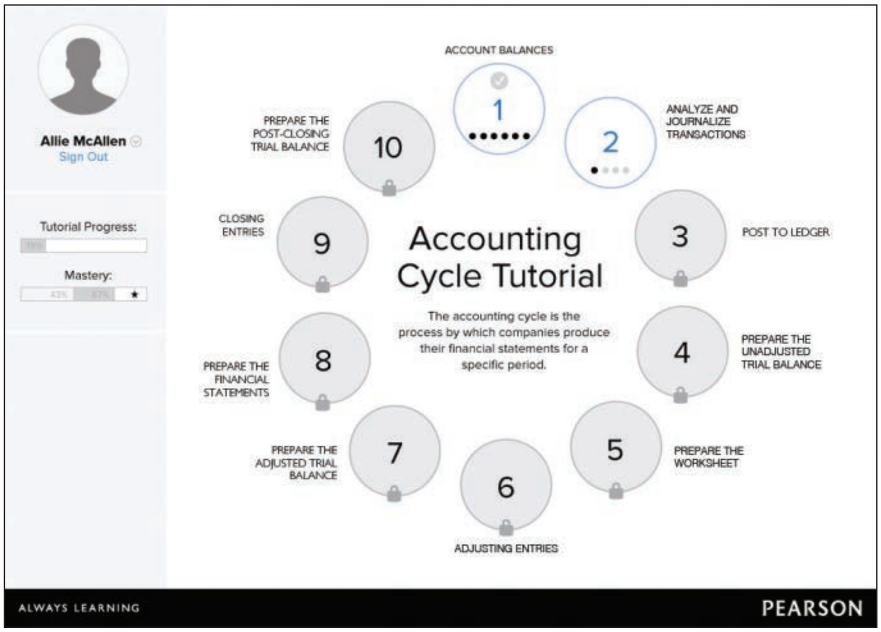
6. For each situation, indicate which category of adjustment (deferral or accrual) is described.
7. Journalize the adjusting entry needed.

Deferral: Cash occurs before revenve or expense

Accrual: Cash occurs after revenve or expensu

a. Dep. Exp.	1500		b. Adv. Exp.	700	
Acc. Dep.		1500	Adv. Pay.		700

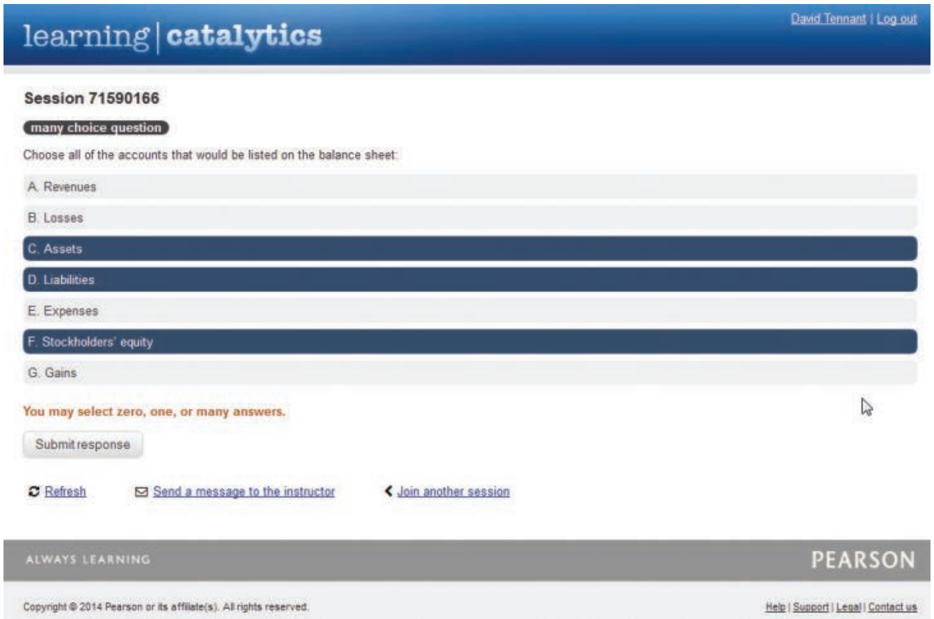
NEW! **Accounting Cycle Tutorial**—MyAccountingLab's new interactive tutorial helps students master the Accounting Cycle for early and continued success in the introduction to Accounting course. The tutorial, accessed by computer, Smartphone, or tablet, provides students with brief explanations of each concept of the Accounting Cycle through engaging videos and/or animations. Students are immediately assessed on their understanding and their performance is recorded in the MyAccountingLab grade book. Whether the Accounting Cycle Tutorial is used as a remediation self-study tool or course assignment, students have yet another resource within MyAccountingLab to help them be successful with the accounting cycle.



Accounting Cycle Tutorial

The accounting cycle is the process by which companies produce their financial statements for a specific period.

NEW! **Learning Catalytics**—A "bring your own device" assessment and classroom activity system that expands the possibilities for student engagement. Using Learning Catalytics, you can deliver a wide range of auto-gradable or open-ended questions that test content knowledge and build critical thinking skills. Eighteen different answer types provide great flexibility, including graphical, numerical, textual input, and more.



Session 71590166

Choose all of the accounts that would be listed on the balance sheet:

A. Revenues

B. Losses

C. Assets

D. Liabilities

E. Expenses

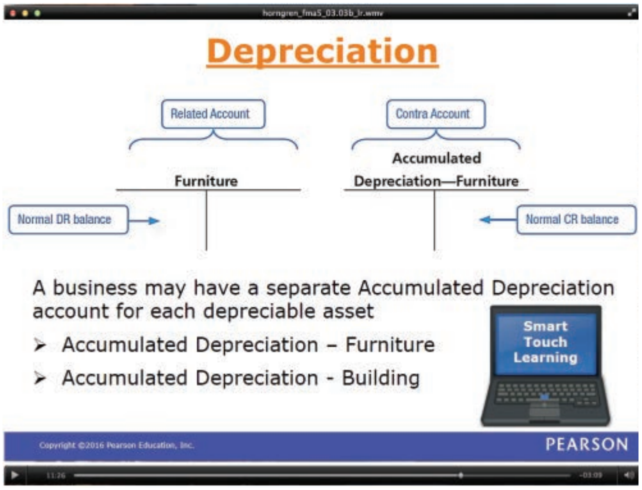
F. Stockholders' equity

G. Gains

You may select zero, one, or many answers.

Copyright © 2014 Pearson or its affiliate(s). All rights reserved.

NEW! **Animated Lectures**—These pre-class learning aids are available for every learning objective and are professor-narrated PowerPoint summaries that will help students prepare for class. These can be used in an online or flipped classroom experience or simply to get students ready for lecture.



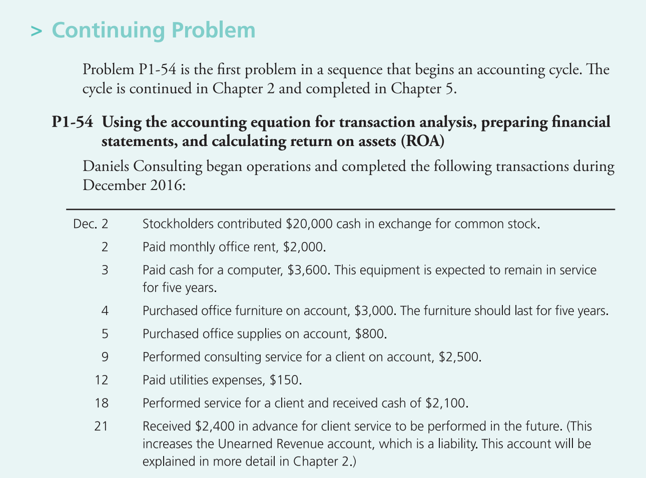
Depreciation

A business may have a separate Accumulated Depreciation account for each depreciable asset

- Accumulated Depreciation – Furniture
- Accumulated Depreciation - Building

Copyright ©2016 Pearson Education, Inc.

End-of-Chapter Continuing and Comprehensive Problems



> Continuing Problem

Problem P1-54 is the first problem in a sequence that begins an accounting cycle. The cycle is continued in Chapter 2 and completed in Chapter 5.

P1-54 Using the accounting equation for transaction analysis, preparing financial statements, and calculating return on assets (ROA)

Daniels Consulting began operations and completed the following transactions during December 2016:

Dec. 2	Stockholders contributed $20,000 cash in exchange for common stock.
2	Paid monthly office rent, $2,000.
3	Paid cash for a computer, $3,600. This equipment is expected to remain in service for five years.
4	Purchased office furniture on account, $3,000. The furniture should last for five years.
5	Purchased office supplies on account, $800.
9	Performed consulting service for a client on account, $2,500.
12	Paid utilities expenses, $150.
18	Performed service for a client and received cash of $2,100.
21	Received $2,400 in advance for client service to be performed in the future. (This increases the Unearned Revenue account, which is a liability. This account will be explained in more detail in Chapter 2.)

Continuing Problem—Starts in Chapter 1 and runs through the entire book exposing students to recording entries for a service company and then moving into recording transactions for a merchandiser later in the text. The managerial chapters emphasize the relevant topics for that chapter using a continuous company.

Practice Set—Starts in Chapter 2 and goes through the financial chapters and provides another opportunity for students to practice the entire accounting cycle. The practice set uses the same company in each chapter but is often not as extensive as the continuing problem.

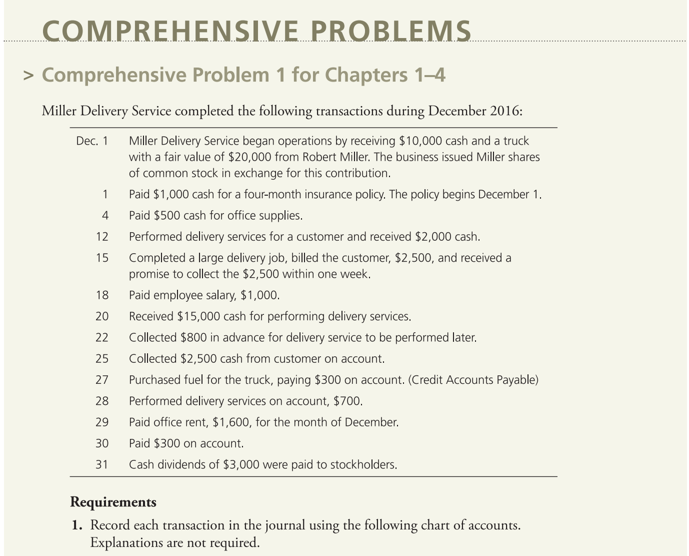
Comprehensive Problem 1 for Chapters 1–4—Covers the entire accounting cycle for a service company.

Comprehensive Problem 2 for Chapters 1–4—A continuation of Comprehensive Problem 1. It requires the student to record transactions for the month after the closing process.

Comprehensive Problem for Chapters 1–5—Covers the entire accounting cycle for a merchandise company.

Comprehensive Problem for Chapter 15—Students use trend analysis and ratios to analyze a company for its investment potential.

Comprehensive Problem for Appendix C—Uses special journals and subsidiary ledgers and covers the entire accounting cycle for a merchandise company. Students can complete this comprehensive problem using the MyAccountingLab General Ledger or Quickbooks™ software.



COMPREHENSIVE PROBLEMS

> Comprehensive Problem 1 for Chapters 1–4

Miller Delivery Service completed the following transactions during December 2016:

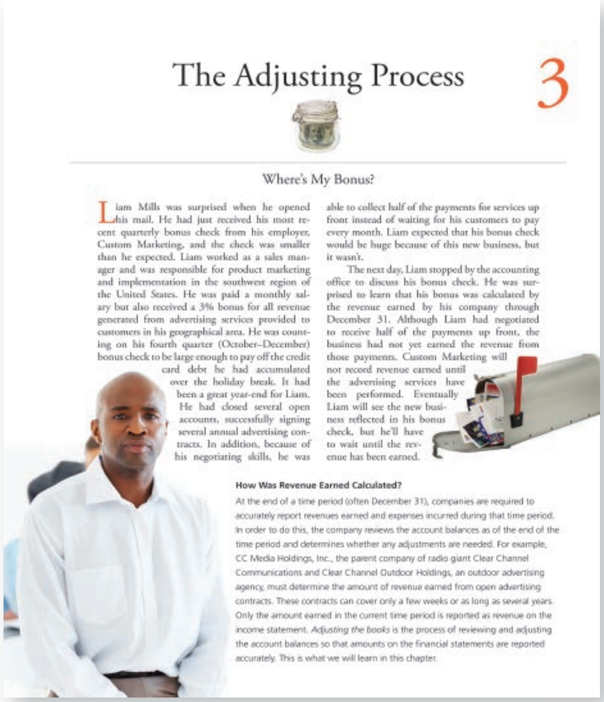
Dec. 1	Miller Delivery Service began operations by receiving $10,000 cash and a truck with a fair value of $20,000 from Robert Miller. The business issued Miller shares of common stock in exchange for this contribution.
1	Paid $1,000 cash for a four-month insurance policy. The policy begins December 1.
4	Paid $500 cash for office supplies.
12	Performed delivery services for a customer and received $2,000 cash.
15	Completed a large delivery job, billed the customer, $2,500, and received a promise to collect the $2,500 within one week.
18	Paid employee salary, $1,000.
20	Received $15,000 cash for performing delivery services.
22	Collected $800 in advance for delivery service to be performed later.
25	Collected $2,500 cash from customer on account.
27	Purchased fuel for the truck, paying $300 on account. (Credit Accounts Payable)
28	Performed delivery services on account, $700.
29	Paid office rent, $1,600, for the month of December.
30	Paid $300 on account.
31	Cash dividends of $3,000 were paid to stockholders.

Requirements

1. Record each transaction in the journal using the following chart of accounts. Explanations are not required.

Chapter Openers

Chapter openers set up the concepts to be covered in the chapter using stories students can relate to. The implications of those concepts on a company's reporting and decision making processes are then discussed.



The Adjusting Process

3

Where's My Bonus?

Liam Mills was surprised when he opened his mail. He had just received his most recent quarterly bonus check from his employer, Custom Marketing, and the check was smaller than he expected. Liam worked as a sales manager and was responsible for product marketing and implementation in the southwest region of the United States. He was paid a monthly salary but also received a 3% bonus for all revenue generated from advertising services provided to customers in his geographical area. He was counting on his fourth quarter (October–December) bonus check to be large enough to pay off the credit card debt he had accumulated over the holiday break. It had been a great year-end for Liam. He had closed several open accounts, successfully signing several annual advertising contracts. In addition, because of his negotiating skills, he was able to collect half of the payments for services up front instead of waiting for his customers to pay every month. Liam expected that his bonus check would be huge because of this new business, but it wasn't.

The next day, Liam stopped by the accounting office to discuss his bonus check. He was surprised to learn that his bonus was calculated by the revenue earned by his company through December 31. Although Liam had negotiated to receive half of the payments up front, the business had not yet earned the revenue from those payments. Custom Marketing will not record revenue earned until the advertising services have been performed. Eventually Liam will see the new business reflected in his bonus check, but he'll have to wait until the revenue has been earned.

How Was Revenue Earned Calculated?

At the end of a time period (often December 31), companies are required to accurately report revenues earned and expenses incurred during that time period. In order to do this, the company reviews the account balances as of the end of the time period and determines whether any adjustments are needed. For example, CC Media Holdings, Inc., the parent company of radio giant Clear Channel Communications and Clear Channel Outdoor Holdings, an outdoor advertising agency, must determine the amount of revenue earned from open advertising contracts. These contracts can cover only a few weeks or as long as several years. Only the amount earned in the current time period is reported as revenue on the income statement. *Adjusting the books* is the process of reviewing and adjusting the account balances so that amounts on the financial statements are reported accurately. This is what we will learn in this chapter.

Effect on the Accounting Equation

Next to every journal entry, these illustrations help reinforce the connections between recording transactions and the effect those transactions have on the accounting equation.

On November 10, Smart Touch Learning performed services for clients, for which the clients will pay the company later. The business earned $3,000 of service revenue on account.

This transaction increased Accounts Receivable, so we debit this asset. Service Revenue is increased with a credit.

A↑ } = { **L** + **E↑**

Accounts Receivable↑   Service Revenue↑

Date	Accounts and Explanation	Debit	Credit
Nov. 10	Accounts Receivable	3,000	
	Service Revenue		3,000
	Performed services on account.		

Instructor Tips & Tricks

Found throughout the text, these handwritten notes mimic the experience of having an experienced teacher walk a student through concepts on the "board." Many include mnemonic devices or examples to help students remember the rules of accounting.

A↓ } = { **L** + **E↓**

Accumulated Depreciation—Building↑   Depreciation Expense—Building↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Depreciation Expense—Building	250	
	Accumulated Depreciation—Building		250
	To record depreciation on building.		

Remember, an increase in a contra asset, such as Accumulated Depreciation, decreases total assets. This is because a contra asset has a credit balance and credits decrease assets.

Common Questions, Answered

Our authors have spent years in the classroom answering students' questions and have found patterns in the concepts or rules that consistently confuse students. These commonly asked questions are located in the margin of the text next to where the answer or clarification can be found highlighted in orange text.

Why was the account Patent credited instead of Accumulated Amortization—Patent?

Notice that Smart Touch Learning credited the amortization directly to the intangible asset, Patent, instead of using an Accumulated Amortization account. A company may credit an intangible asset directly when recording amortization expense, or it may use the account Accumulated Amortization. **Companies frequently choose to credit the asset account directly because the residual value is generally zero and there is no physical asset to dispose of at the end of its useful life, so the asset essentially removes itself from the books through the process of amortization.**

At the end of the first year, Smart Touch Learning will report this patent at $160,000 ($200,000 cost minus first-year amortization of $40,000), the next year at $120,000, and so forth. Each year for five years the value of the patent will be reduced until the end of its five-year life, at which point its book value will be $0.

Try It! Boxes

Found after each learning objective, Try Its! give students the opportunity to apply the concept they just learned to an accounting problem. Deep linking in the eText will allow students to practice in MyAccountingLab without interrupting their interaction with the eText.

Try It!

Total Pool Services earned $130,000 of service revenue during 2016. Of the $130,000 earned, the business received $105,000 in cash. The remaining amount, $25,000, was still owed by customers as of December 31. In addition, Total Pool Services incurred $85,000 of expenses during the year. As of December 31, $10,000 of the expenses still needed to be paid. In addition, Total Pool Services prepaid $5,000 cash in December 2016 for expenses incurred during the next year.

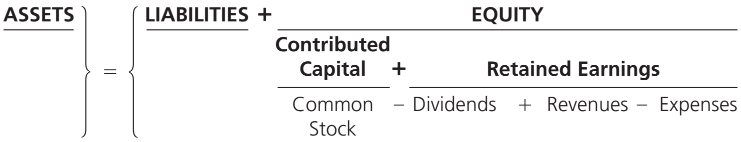
1. Determine the amount of service revenue and expenses for 2016 using a cash basis accounting system.
2. Determine the amount of service revenue and expenses for 2016 using an accrual basis accounting system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S3-1 and S3-2. MyAccountingLab

Redesigned

The redesign includes clean and consistent art for T-accounts, journal entries, financial statements, and the accounting equation. New art types include clear explanations and connection arrows to help students follow the transaction process.

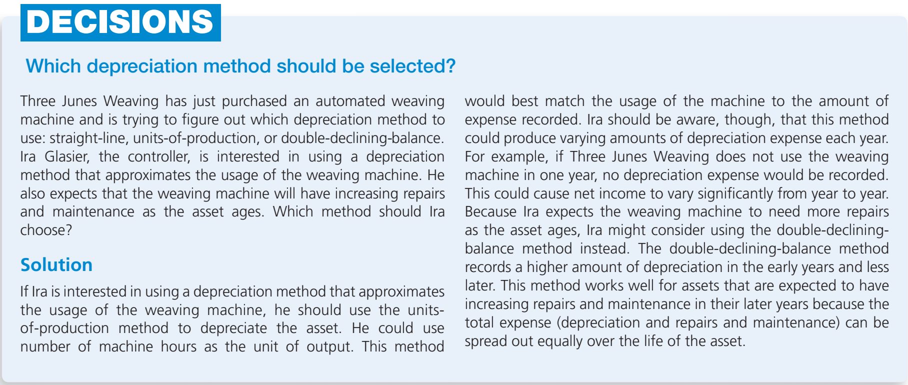


IFRS

Information on IFRS provides guidance on how IFRS differs from U.S. GAAP throughout the financial chapters.

Decision Boxes

This feature provides common questions and potential solutions business owners face. Students are asked to determine the course of action they would take based on concepts covered in the chapter and are then given potential solutions.



DECISIONS

Which depreciation method should be selected?

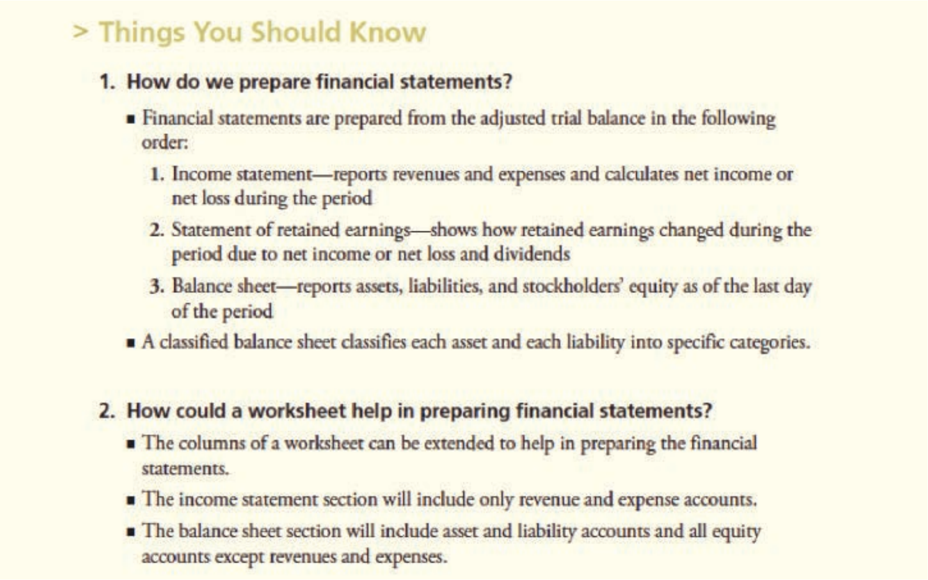
Three Junes Weaving has just purchased an automated weaving machine and is trying to figure out which depreciation method to use: straight-line, units-of-production, or double-declining-balance. Ira Glasier, the controller, is interested in using a depreciation method that approximates the usage of the weaving machine. He also expects that the weaving machine will have increasing repairs and maintenance as the asset ages. Which method should Ira choose?

Solution

If Ira is interested in using a depreciation method that approximates the usage of the weaving machine, he should use the units-of-production method to depreciate the asset. He could use number of machine hours as the unit of output. This method would best match the usage of the machine to the amount of expense recorded. Ira should be aware, though, that this method could produce varying amounts of depreciation expense each year. For example, if Three Junes Weaving does not use the weaving machine in one year, no depreciation expense would be recorded. This could cause net income to vary significantly from year to year. Because Ira expects the weaving machine to need more repairs as the asset ages, Ira might consider using the double-declining-balance method instead. The double-declining-balance method records a higher amount of depreciation in the early years and less later. This method works well for assets that are expected to have increasing repairs and maintenance in their later years because the total expense (depreciation and repairs and maintenance) can be spread out equally over the life of the asset.

Things You Should Know

Provides students with a brief review of each learning objective presented in a question and answer format.



> Things You Should Know

1. How do we prepare financial statements?

- Financial statements are prepared from the adjusted trial balance in the following order:
  1. Income statement—reports revenues and expenses and calculates net income or net loss during the period
  2. Statement of retained earnings—shows how retained earnings changed during the period due to net income or net loss and dividends
  3. Balance sheet—reports assets, liabilities, and stockholders' equity as of the last day of the period
- A classified balance sheet classifies each asset and each liability into specific categories.

2. How could a worksheet help in preparing financial statements?

- The columns of a worksheet can be extended to help in preparing the financial statements.
- The income statement section will include only revenue and expense accounts.
- The balance sheet section will include asset and liability accounts and all equity accounts except revenues and expenses.

Dear Colleague,

Thank you for taking time, out of what we know is a busy schedule, to review the newest edition of *Horngren's Financial and Managerial Accounting*. We are excited to share our innovations with you as we expand on the proven success of our significant revision to the Horngren franchise. Using what we have learned from focus groups, market feedback, and our colleagues, we've designed this edition to focus on several goals.

First, we made certain that our content was clear, consistent, and above all, accurate. As authors, we reviewed each chapter to ensure that students understand what they are reading and that there is consistency from chapter to chapter. In addition, our textbook goes through a multi-level accuracy check which includes the author team working every single accounting problem and having a team of accounting professors from across the nation review for accuracy. Next, through ongoing conversations with our colleagues and our time engaged at professional conferences, we confirmed that our pedagogy and content represents the leading methods used in the classroom and provides your students with the foundation they need to be successful in their future academic and professional careers. Lastly, we concentrated on student success and providing resources for professors to create an active and engaging classroom.

Student success. Using our experience as educators, our team carefully considered how students learn, what they learn, and where they struggle the most. We understand that sometimes there is a gap in students' understanding between the textbook content and what is done in the classroom or in an online environment, so we have included in the textbook and enhanced eText several great learning aids for students. *Instructor Tips and Tricks* and *Common Questions Answered* address areas that are typically challenging for students. These aids provide handy memory tools or address common student misconceptions or confusion. We also realized that students use our enhanced eText to study on their own time and we have built in many new features to bring learning to life and to allow students to apply the concepts they are reading about outside of the classroom. Available through MyAccountingLab, students have the opportunity to watch author recorded solution videos, practice the accounting cycle using an interactive tutorial, and watch in-depth author-driven animated lectures that cover every learning objective.

Professor expectations. As professors, we know it's critical to have excellent end-of-chapter material and instructor resources. With these expectations, all end-of-chapter problems have been revised and our author team, along with our trusted accuracy checkers, have checked every problem for accuracy and consistency. In addition to financial comprehensive problems, three NEW comprehensive problems have been added to the managerial content. These problems cover multiple chapters and encourage students to think reflectively about prior material learned and the connections between accounting concepts. We have also reviewed and updated ALL instructor resources to accompany this edition of the book. In addition, the PowerPoint presentations and Test Bank have had significant revisions based upon your feedback and needs.

Expanding on the proven success of our last edition, we believe that our enhancements to *Horngren's Financial and Managerial Accounting*, along with MyAccountingLab, will help your students achieve success in accounting. We welcome your feedback, suggestions, and comments. Please don't hesitate to contact us at *HorngrensAccounting@pearson.com*.

Tracie L. Miller-Nobles, CPA   Brenda Mattison   Ella Mae Matsumura, PhD

This page intentionally left blank

Instructor and Student Resources

Each supplement, including the resources in MyAccountingLab, has been reviewed by the author team to ensure accuracy and consistency with the text. Given their personal involvement, you can be assured of the high quality and accuracy of all supplements.

For Instructors

MyAccountingLab

Online Homework and Assessment Manager: http://www.myaccountinglab.com

Instructor Resource Center: http://www.pearsonglobaleditions.com/Horngren

For the instructor's convenience, the instructor resources can be downloaded from the textbook's catalog page (http://www.pearsonglobaleditions.com/Horngren) and MyAccountingLab. Available resources include the following:

Online Instructor's Resource Manual:

Course Content:

- Tips for Taking Your Course from Traditional to Hybrid, Blended, or Online
- Standard Syllabi for Financial Accounting (10-week & 16-week)
- Standard Syllabi for Managerial Accounting (10-week & 16-week)
- Sample Syllabi for 10- and 16-week courses
- "First Day of Class" student handouts include:
    - Student Walk-Through to Set-up MyAccountingLab
    - Tips on How to Get an A in This Class

Chapter Content:

- Chapter Overview
    - Contains a brief synopsis and overview of each chapter.
- Learning Objectives
- Teaching Outline with Lecture Notes
    - Revised to combine the Teaching Outline and the Lecture Outline Topics, so instructors only have one document to review.
    - Walks instructors through what material to cover and what examples to use when addressing certain items within the chapter.
- Handout for Student Notes
    - An outline to assist students in taking notes on the chapter.
- Student Chapter Summary
    - Aids students in their comprehension of the chapter.
- Assignment Grid
    - Indicates the corresponding Learning Objective for each exercise and problem.
- Answer Key to Chapter Quiz
- Ten-Minute Quiz
    - To quickly assess students' understanding of the chapter material.
- Extra Critical Thinking Problems and Solutions
    - Critical Thinking Problems removed from this edition of the text were moved to the IRM so instructors can continue to use their favorite problems.
- NEW Guide to Classroom Engagement Questions
    - Author-created element will offer tips and tricks to instructors in order to help them use the Learning Catalytic questions in class.

Online Instructor's Solutions Manual:

- Contains solutions to all end-of-chapter questions, short exercises, exercises, and problems.
- The Try It! Solutions, previously found at the end of each chapter, are now available for download with the ISM.
- All solutions were thoroughly reviewed by the author team and other professors.

Online Test Bank:

- Includes more than 3,900 questions.
- Both conceptual and computational problems are available in true/false, multiple choice, and open-ended formats.
- Algorithmic test bank is available in MyAccountingLab.

PowerPoint Presentations:

Instructor PowerPoint Presentations:

- Complete with lecture notes.
- Mirrors the organization of the text and includes key exhibits.

Student PowerPoint Presentations:

- Abridged versions of the Instructor PowerPoint Presentations.
- Can be used as a study tool or note-taking tool for students.

Demonstration Problem PowerPoint Presentations:

- Offers instructors the opportunity to review in class the exercises and problems from the chapter using different companies and numbers.

Clicker Response System (CRS) PowerPoint Presentations:

- 10 multiple-choice questions to use with a Clicker Response System.

Image Library:

- All image files from the text to assist instructors in modifying our supplied PowerPoint presentations or in creating their own PowerPoint presentations.

Working Papers and Solutions:

- Available in Excel format.
- Templates for students to use to complete exercises and problems in the text.

Data and Solutions Files:

- Select end-of-chapter problems have been set up in different software applications, including QuickBooks and General Ledger.
- Corresponding solution files are provided for QuickBooks.

For Students

MyAccountingLab

Online Homework and Assessment Manager: http://www.myaccountinglab.com

- Pearson Enhanced eText
- Data Files
- Animated Lectures
- Demo Docs
- Working Papers
- Student PowerPoint® Presentations
- Accounting Cycle Tutorial
- Flash Cards

Student Resource Web site: http://www.pearsonglobaleditions.com/Horngren

The book's Web site contains the following:

- Data Files: Select end-of-chapter problems have been set up in QuickBooks software and the related files are available for download.
- Working Papers
- Try It! Solutions: The solutions to all in-chapter Try Its! are available for download.

http://www.pearsonglobaleditions.com/Horngren

Acknowledgments

Acknowledgments for This Edition:

Tracie Miller–Nobles would like to thank her parents and sister: Kipp and Sylvia Miller and Michelle Miller. She would also like to express her gratitude to her many colleagues and friends who encourage and support her. In addition, she would like to thank Kevin Morris for always making her laugh and for being the best camping buddy she could ever ask for. Here's to many more trails.

Brenda Mattison has always had the loving support of her family and wishes to express her gratitude to them, especially her husband, Grant Mattison, who has been a constant and stable influence and inspiration for more than 25 years. Her family's faith in her, along with her faith in God, provided the solid foundation that allowed her to develop her gift of teaching and achieve her dreams while helping others to achieve theirs.

Ella Mae Matsumura thanks her family for their longstanding love and support in her endeavors: husband, Kam-Wah Tsui; son, David Tsui; sister and late parents, Linda, Lester, and Eda Matsumura. She would also like to express her appreciation to: the numerous colleagues and friends who have encouraged her and helped her grow as a scholar and a person; the many students who have provided constructive feedback that has shaped her teaching; and her faith community for its enduring love and affirmation.

The authors would like to sincerely thank Lacey Vitetta, Roberta Sherman, Mary Kate Murray, Andra Skaalrud, Alison Haskins, and Donna Battista for their unwavering support of this edition. They express their extreme pleasure in working with each of them and are appreciative of their guidance, patience, and belief in the success of this project.

Contributor:

Lori Hatchell, *Aims Community College*

Advisory Panels, Focus Group Participants, and Reviewers:

Samad Adams, *Bristol Community College*
Sharon Agee, *Rollins College*
Markus Ahrens, *St. Louis Community College*
Janice Akao, *Butler County Community College*
Anna Alexander, *Caldwell Community College and Technical Institute*
Sheila Ammons, *Austin Community College*
Sidney Askew, *Borough of Manhattan Community College*
Michael Barendse, *Grossmont College*
Vikki Bentz, *Yavapai College*
Jennifer Cainas, *University of South Florida*
Anne Cardozo, *Broward College*
Elizabeth Carlson, *University of South Florida Sarasota-Manatee*
Martha Cavalaris, *Miami Dade College*
Donna Chadwick, *Sinclair Community College*
Colleen Chung, *Miami Dade College*
Tom Clement, *University of North Dakota*
Geoffrey Danzig, *Miami Dade College–North*
Judy Daulton, *Piedmont Technical College*
Michelle Davidowitz, *Kingsborough Community College*
Annette Fisher Davis, *Glendale Community College*
Anthony Dellarte, *Luzerne County Community College*
Crystal Drum, *Guilford Technical Community College*
Mary Ewanechko, *Monroe Community College*
Elisa Fernandez, *Miami Dade College*
Lori Grady, *Bucks County Community College*
Marina Grau, *Houston Community College*
Gloria Grayless, *Sam Houston State University*
Dawn D. Hart, *Darton State College*
Lori Hatchell, *Aims Community College*
Shauna Hatfield, *Salt Lake Community College*
Patricia Holmes, *Des Moines Area Community College*
Cynthia Johnson, *University of Arkansas, Little Rock*
Jeffrey Jones, *The College of Southern Nevada*
Thomas K. Y. Kam, *Hawaii Pacific University*
Anne Kenner, *Brevard Community College*
Stephanie (Sam) King, *Edison State College*
Paul Koulakov, *Nashville State Community College*
Christy Land, *Catawba Valley Community College*
Wayne Lewis, *Hudson Valley Community College*
Mabel Machin, *Valencia College*
Mostafa Maksy, *Kutztown University*
Richard Mandau, *Piedmont Technical College*
Maria C. Mari, *Miami Dade College*
Cynthia J. Miller, *University of Kentucky*
Joanne Orabone, *Community College of Rhode Island*
Kimberly Perkins, *Austin Community College*
William Quilliam, *Florida Southern College*
Marcela Raphael, *Chippewa Valley Technical College*
Ryan Rees, *Salt Lake Community College*
Cecile Robert, *Community College of Rhode Island*
Shani Nicole Robinson, *Sam Houston State University*
Carol Rowey, *Community College of Rhode Island*
Amanda J. Salinas, *Palo Alto College*

Dennis Shea, *Southern New Hampshire University*
Jaye Simpson, *Tarrant County*
John Stancil, *Florida Southern*
Diana Sullivan, *Portland Community College*
Annette Taggart, *Texas A&M University–Commerce*
Linda Tarrago, *Hillsborough Community College*
Teresa Thompson, *Chaffey College*
Judy Toland, *Bucks County Community College*
Robin D. Turner, *Rowan-Cabarrus Community College*
William Van Glabek, *Edison State College*
Stanley Walker, *Georgia Northwestern Tech*
Deb Weber, *Hawkeye Community College*
Denise A. White, *Austin Community College*
Donald R. Wilke, *Northwest Florida State College*
Wanda Wong, *Chabot College*
Judy Zander, *Grossmont College*

Accuracy Checkers:

James L. Baker, *Harford Community College*
Nancy Emerson, *North Dakota State University*
Richard Mandau, *Piedmont Technical College*
Carolyn Streuly
Carol Hughes, *Asheville-Buncombe Technical Community College*

Supplements Authors and Reviewers:

David Dearman, *Piedmont Technical College*
Kelly Damron, *Glendale Community College*
Helen Brubeck, *Saint Mary-of-the-Woods College*
Brett Killion, *Lakeland College*
Sheila Ammons, *Austin Community College*
Dave Alldredge, *Salt Lake Community College*
Michelle Suminski, *Marygrove College*
Connie Belden, *Butler Community College*
Kate Demarest, *Carroll Community College*

The authors would like to express their gratitude for the diligent and exemplary work of all of our contributors, reviewers, accuracy checkers, and supplement authors. Each of you played a part in making this book successful! Thank you!

Accounting and the Business Environment

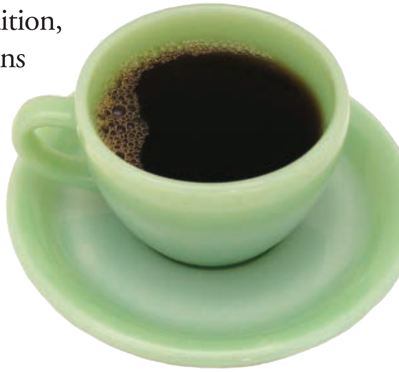
1

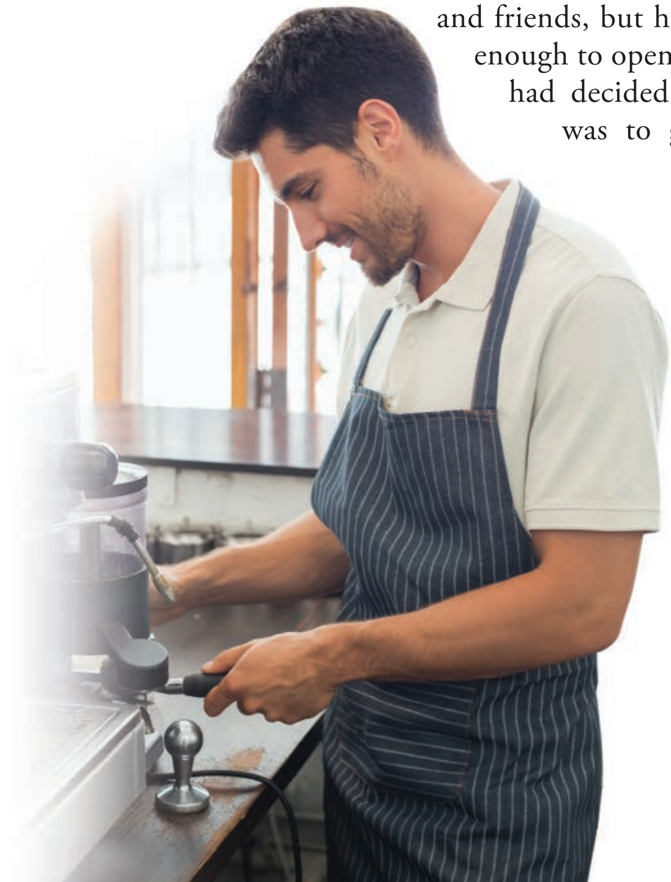
Coffee, Anyone?

Aiden Jackson stared at the list the banker had given him during their meeting. *Business plan, cash flow projections, financial statements, tax returns.* Aiden had visited with the banker because he had a dream of opening a coffee shop near campus. He knew there was a need; students were always looking for a place to study and visit with their friends. He also had the experience. He had worked for the past three years as a manager of a coffee shop in a neighboring town. Aiden needed one thing, though—money. He had saved a small amount of money from his job and received several contributions from family and friends, but he still didn't have enough to open the business. He had decided the best option was to get a loan from his bank. After the meeting, Aiden felt overwhelmed and unsure of the future of his business.

You might think that Aiden was facing an impossible situation, but you'd be wrong. Almost every new business faces a similar situation. The owner starts with an inspiration, and then he or she needs to provide enough continuous cash flow to build the business. In addition, the owner has to make decisions such as: *Should we expand to another location? Do we have enough money to purchase a new coffee roaster? How do I know if the business made a profit?*

So how does Aiden get started? Keep reading. That's what accounting teaches you.





Why Study Accounting?

The situation that Aiden faced is similar to the situations faced in the founding of most businesses. **Starbucks Corporation**, for example, first opened its doors in Seattle, Washington, in 1971. Three partners, Jerry Baldwin, Zev Siegl, and Gordon Bowker, were inspired by a dream of selling high-quality coffee. We know their dream was successful because Starbucks currently has more than 19,000 stores in 60 countries. How did Starbucks grow from a small one-store shop to what it is today? The partners understood accounting—the language of business. They understood how to measure the activities of the business, process that information into reports (financial statements), and then use those reports to make business decisions. Your knowledge of accounting will help you better understand businesses. It will make you a better business owner, employee, or investor.

Chapter 1 Learning Objectives

1. Explain why accounting is important and list the users of accounting information
2. Describe the organizations and rules that govern accounting
3. Describe the accounting equation and define assets, liabilities, and equity
4. Use the accounting equation to analyze transactions
5. Prepare financial statements
6. Use financial statements and return on assets (ROA) to evaluate business performance

WHY IS ACCOUNTING IMPORTANT?

Learning Objective 1
Explain why accounting is important and list the users of accounting information

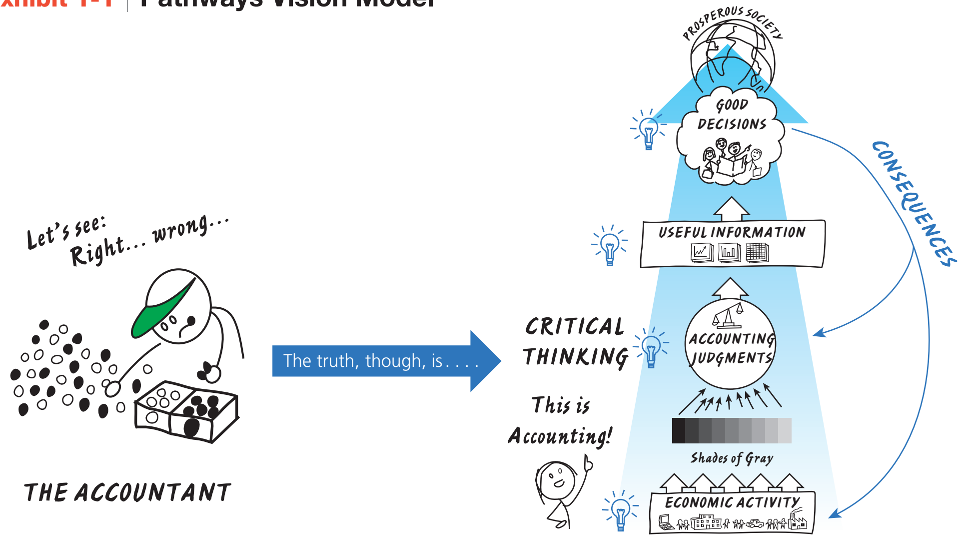
Accounting
The information system that measures business activities, processes the information into reports, and communicates the results to decision makers.

You've heard the term *accounting*, but what exactly is it? **Accounting** is the information system that measures business activities, processes the information into reports, and communicates the results to decision makers. Accounting is the language of business. The better you understand the language of business, the better you can manage your own business, be a valuable employee, or make wise investments.

We tend to think of accountants as boring and dry. However, accounting is much more than simple recordkeeping or bookkeeping. Today's accountants participate in a broad range of activities such as the investigation of financial evidence, the development of computer programs to process accounting information, and the communication of financial results to interested parties. The knowledge of accounting is used every day to help make business decisions.

Recently, leaders from across the accounting community, called the Pathways Commission, came together to create a vision model (see Exhibit 1-1) to help students and

Exhibit 1-1 | **Pathways Vision Model**



We tend to think of accountants as boring and dry.

Accountants are instrumental in helping to create a prosperous society.

the public understand what accounting is. The model is intended to explain in a visual way what accountants really do. Accounting starts with economic activities that accountants review and evaluate using critical thinking and judgment to create useful information that helps individuals make good decisions. The model emphasizes that good decisions have an impact on accounting judgments and economic activity, thus creating a circular flow of cause and effect. Accountants are more than boring, tedious number crunchers. Instead, accountants play a critical role in supporting a prosperous society.

Decision Makers: The Users of Accounting Information

We can divide accounting into two major fields: financial accounting and managerial accounting. **Financial accounting** provides information for external decision makers, such as outside investors, lenders, customers, and the federal government. **Managerial accounting** focuses on information for internal decision makers, such as the company's managers and employees.

Exhibit 1-2 illustrates the difference between financial accounting and managerial accounting. Regardless of whether they are external or internal to the company, all decision makers need information to make the best choices. The bigger the decision, the more information decision makers need. Let's look at some ways in which various people use accounting information to make important decisions.

Financial Accounting
The field of accounting that focuses on providing information for external decision makers.

Managerial Accounting
The field of accounting that focuses on providing information for internal decision makers.

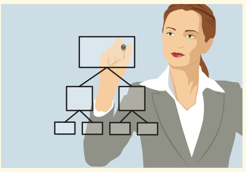
Exhibit 1-2 | **Decision Making: Financial Versus Managerial Accounting**

Financial Accounting

External Decision Makers:

Should I invest in the business?
Is the business profitable?
Should we lend money to the business?
Can the business pay us back?

Managerial Accounting



Internal Decision Makers:

How much money should the business budget for production?
Should the business expand to a new location?
How do actual costs compare to budgeted costs?

IFRS

Accounting is alive! As businesses evolve and the type of business transactions change, so must the language of business. The most significant changes in the business world in the last decade have been the huge increases in international commerce. Because more business is conducted internationally, decision makers are looking for an international accounting language.

Look for more information about International Financial Reporting Standards (IFRS) anywhere that you see this image.

Individuals

How much cash do you have? How much do you need to save each month to retire at a certain age or pay for your children's college education? Accounting can help you answer questions like these. By using accounting information, you can manage your money, evaluate a new job, and better decide whether you can afford to buy a new computer. Businesses need accounting information to make similar decisions.

Businesses

Business owners use accounting information to set goals, measure progress toward those goals, and make adjustments when needed. The financial statements give owners the information they need to help make those decisions. Financial statements are helpful when, for example, a business owner wants to know whether his or her business has enough cash to purchase another computer.

Investors

Outside investors who have some ownership interest often provide the money to get a business going. Suppose you're considering investing in a business. How would you decide whether it is a good investment? In making this decision, you might try to predict the amount of income you would earn on the investment. Also, after making an investment, investors can use a company's financial statements to analyze how their investment is performing.

You might have the opportunity to invest in the stock market through your company's retirement plan. Which investments should you pick? Understanding a company's financial statements will help you decide. You can view the financial statements of large companies that report to the SEC by logging on to **http://www.finance.yahoo.com, http://www.google.com/finance**, or the Security and Exchange Commission's EDGAR database (**http://www.sec.gov/edgar.shtml**).

Creditors

Creditor
Any person or business to whom a business owes money.

Any person or business to whom a business owes money is a **creditor**. Before extending credit to a business, a creditor evaluates the company's ability to make the payments by reviewing its financial statements. Creditors follow the same process when you need to borrow money for a new car or a house. The creditor reviews accounting data to determine your ability to make the loan payments. What does your financial position tell the creditor about your ability to pay the loan? Are you a good risk for the bank?

Taxing Authorities

Local, state, and federal governments levy taxes. Income tax is calculated using accounting information. Good accounting records can help individuals and businesses take advantage of lawful deductions. Without good records, the IRS can disallow tax deductions, resulting in a higher tax bill plus interest and penalties.

The Accounting Profession

What do businesses such as Amazon.com, Walmart, or even your local sandwich shop across from campus have in common? They all need accountants! That is why a degree in accounting opens so many doors upon graduation.

Certified Public Accountants (CPAs)
Licensed professional accountants who serve the general public.

You've probably heard of a CPA before. **Certified Public Accountants**, or **CPAs**, are licensed professional accountants who serve the general public. CPAs work for public accounting firms, businesses, government entities, or educational institutions. What does it take to be a CPA? Although requirements vary between states, to be certified in a profession, one must meet the educational and/or experience requirements *and* pass a qualifying exam. **The American Institute of Certified Public Accountants (AICPA) Web site (http://www.thiswaytocpa.com) contains a wealth of information about becoming a CPA, career opportunities, and exam requirements.**

What if I want more information about becoming a CPA or CMA?

Certified Management Accountants (CMAs)
Certified professionals who specialize in accounting and financial management knowledge. They typically work for a single company.

Certified Management Accountants, or **CMAs**, are certified professionals who specialize in accounting and financial management knowledge. Generally, CMAs work for a single company. **You can find information about becoming a CMA, how a CMA differs from a CPA, and why employers are recognizing the CMA certification on the Institute of Management Accountants (IMA) Web site (http://www.imanet.org).** It's worth spending the time and energy for accountants to get certified—certified accountants generally make 10–15% more than their noncertified colleagues when they enter the workforce.

Studying accounting and becoming certified professionally can lead to a financially secure job. According to Robert Half's *2014 Salary Guide*, the top positions in demand that rely on accounting skills are controllers, financial analysts, tax accountants, auditors, cost accountants, and business systems analysts. How much do these types of accountants make? Exhibit 1-3 provides a snapshot of the earning potential for key positions.

Exhibit 1-3 | **Comparison of Accounting Positions**

Position	Job Description	Salary Range
Controllers	Compile financial statements, interact with auditors, and oversee regulatory reporting.	$89,000–$216,000
Financial analysts	Review financial data and help to explain the story behind the numbers.	$41,250–$125,000
Business systems analysts	Use accounting knowledge to create computer systems.	$44,250–$107,250
Tax accountants	Help companies navigate tax laws.	$44,000–$190,750
Auditors	Perform reviews of companies to ensure compliance to rules and regulations.	$44,500–$184,750
Cost accountants	Typically work in a manufacturing business. Help analyze accounting data.	$43,000–$113,000
Paraprofessional/ Bookkeeper	Record financial transactions and help prepare financial records.	$39,750–$59,250

Accountants generally work either in public, private, or governmental accounting. Public accounting involves services such as auditing and tax preparation. Well-known public accounting firms include Ernst & Young, Deloitte, PwC, and KPMG. Private accounting involves working for a single company such as Amazon.com, Walmart, or Dell. Other accountants work for the federal or state governments. Wherever accountants work, demand for their services is high. According to the U.S. Bureau of Labor Statistics, employment of accountants and auditors is expected to grow 13% from 2012–2022.

IFRS

Recently, the AICPA added a certification program in international accounting for those CPAs who want to specialize in global commerce.

Try It!

Match the accounting terminology to the definitions.

1. Certified management accountants
2. Accounting
3. Managerial accounting
4. Certified public accountants
5. Financial accounting
6. Creditor

a. the information system that measures business activities, processes that information into reports, and communicates the results to decision makers

b. licensed professional accountants who serve the general public

c. any person or business to whom a business owes money

d. the field of accounting that focuses on providing information for internal decision makers

e. certified professionals who work for a single company

f. the field of accounting that focuses on providing information for external decision makers

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S1-1. MyAccountingLab

WHAT ARE THE ORGANIZATIONS AND RULES THAT GOVERN ACCOUNTING?

Learning Objective 2

Describe the organizations and rules that govern accounting

All professions have regulations. Let's look at the organizations and rules that govern the accounting profession.

Governing Organizations

Financial Accounting Standards Board (FASB)

The private organization that oversees the creation and governance of accounting standards in the United States.

Securities and Exchange Commission (SEC)

U.S. governmental agency that oversees the U.S. financial markets.

In the United States, the **Financial Accounting Standards Board (FASB)**, a privately funded organization, oversees the creation and governance of accounting standards. The FASB works with governmental regulatory agencies like the **Securities and Exchange Commission (SEC)**. The SEC is the U.S. governmental agency that oversees the U.S. financial markets. It also oversees those organizations that set standards (like the FASB). The FASB also works with congressionally created groups like the Public Company Accounting Oversight Board (PCAOB) and private groups like the AICPA, IMA, and International Accounting Standards Board (IASB).

Generally Accepted Accounting Principles

Generally Accepted Accounting Principles (GAAP)

Accounting guidelines, currently formulated by the *Financial Accounting Standards Board (FASB)*; the main U.S. accounting rule book.

The guidelines for accounting information are called **Generally Accepted Accounting Principles (GAAP)**. GAAP is the main U.S. accounting rule book and is currently created and governed by the FASB. In order to use and prepare financial statements, it's important that we understand GAAP. GAAP rests on a conceptual framework that identifies the objectives, characteristics, elements, and implementation of financial statements and creates the acceptable accounting practices. The primary objective of financial reporting is to provide information useful for making investment and lending decisions. To be useful, information must be relevant and have faithful representation.[1] Relevant information allows users of the information to make a decision. Information that is faithfully representative is complete, neutral, and free from error. These basic accounting assumptions and principles are part of the foundation for the financial reports that companies present.

The Economic Entity Assumption

Economic Entity Assumption

An organization that stands apart as a separate economic unit.

The most basic concept in accounting is that of the **economic entity assumption**. An economic (business) entity is an organization that stands apart as a separate economic unit. We draw boundaries around each entity to keep its affairs distinct from those of other entities. An entity refers to one business, separate from its owners.

A business can be organized as a sole proprietorship, partnership, corporation, or limited-liability company (LLC). Exhibit 1-4 summarizes the similarities and differences among the four types of business organizations.

Distinguishing Characteristics and Organization of a Corporation

In this book, we spend most of our time studying accounting for corporations. There are several features that distinguish a corporation from other types of business organizations. Let's look at them now.

Separate Legal Entity A corporation is a business entity formed under state law. The state grants a charter (also called *articles of incorporation*), which is the document that gives

---

[1] This wording was changed from relevant and reliable by the *Statement of Financial Accounting Concepts No. 8*.

Exhibit 1-4 | **Business Organizations**

	Sole Proprietorship	Partnership	Corporation	Limited-Liability Company (LLC)
Definition	A business with a single owner	A business with two or more owners and not organized as a corporation	A business organized under state law that is a separate legal entity	A company in which each member is only liable for his or her own actions
Number of owners	One (called the proprietor)	Two or more (called partners)	One or more (called stockholders)	One or more (called members or partners)
Life of the organization	Terminates at owner's choice or death	Terminates at a partner's choice or death	Indefinite	Indefinite
Personal liability of the owner(s) for the business's debts	Owner is personally liable	Partners are personally liable	Stockholders are not personally liable	Members are not personally liable
Taxation	Not separate taxable entities. The owner pays tax on the proprietorship's earnings.	Partnership is not taxed. Instead partners pay tax on their share of the earnings.	Separate taxable entity. Corporation pays tax.	LLC is not taxed. Instead members pay tax on their share of earnings.
Type of business	Small businesses	Professional organizations of physicians, attorneys, and accountants	Large multinational businesses	An alternative to the partnership

the state's permission to form a corporation. This is called authorization because the state "authorizes" or approves the establishment of the corporate entity.

A corporation is a distinct entity from a legal perspective. It is an entity that exists apart from its owners, who are called the **stockholders** or *shareholders*. However, the corporation has many of the rights that a person has. For example, a corporation may buy, own, and sell property; enter into contracts; sue; and be sued. Items that the business owns (its assets) and those items that the business has to pay later (its liabilities) belong to the corporation and not to the individual stockholders.

The ownership interest of a corporation is divided into shares of stock. A person becomes a stockholder by purchasing the stock of the corporation. The corporate charter specifies how much stock the corporation is authorized to issue (sell) to the public. Due to this fact, it is usually easier for corporations to raise capital.

Continuous Life and Transferability of Ownership Stockholders may transfer stock as they wish—by selling or trading the stock to another person, giving the stock away, bequeathing it in a will, or disposing of the stock in any other way. Because corporations have continuous lives regardless of changes in the ownership of their stock, the transfer of the stock has no effect on the continuity of the corporation. Sole proprietorships and partnerships, in contrast, end when their ownership changes for any reason. A corporation's life is not dependent on a specific individual's ownership.

No Mutual Agency No mutual agency means that the stockholder of a corporation cannot commit the corporation to a contract unless that stockholder is acting in a different role, such as an officer in the business. Mutual agency of the owners is not present in a corporation as it is in a partnership.

Sole Proprietorship
A business with a single owner.

Partnership
A business with two or more owners and not organized as a corporation.

Corporation
A business organized under state law that is a separate legal entity.

Limited-Liability Company (LLC)
A company in which each member is only liable for his or her own actions.

Stockholder
A person who owns stock in a corporation.

Limited Liability of Stockholders A stockholder has limited liability for the corporation's debts. The most that stockholders can lose is the amount they originally paid for the stock. (Depending on state law, this limited liability would also apply to a limited-liability company member; however, conversely, sole proprietors and partners are personally liable for the debts of their businesses.)

The combination of limited liability and no mutual agency means that persons can invest unlimited amounts in a corporation with only the fear of losing whatever amount the individual has invested if the business fails. This attractive feature enables a corporation to raise more money than proprietorships and partnerships.

Separation of Ownership and Management Stockholders own the business, but a board of directors—elected by the stockholders—appoints corporate officers to manage the business. Thus, stockholders do not have to disrupt their personal affairs to manage the business.

This separation between stockholders (owners of the corporation) and management may create problems. Corporate officers may decide to run the business for their own benefit rather than for the benefit of the company. Stockholders may find it difficult to lodge an effective protest against management because of the distance between them and the top managers.

Corporate Taxation Corporations are separate taxable entities. They pay a variety of taxes not paid by sole proprietorships or partnerships. Depending on the state in which the organization incorporated and the state(s) in which the corporation operates, the taxes could include one or both of the following:

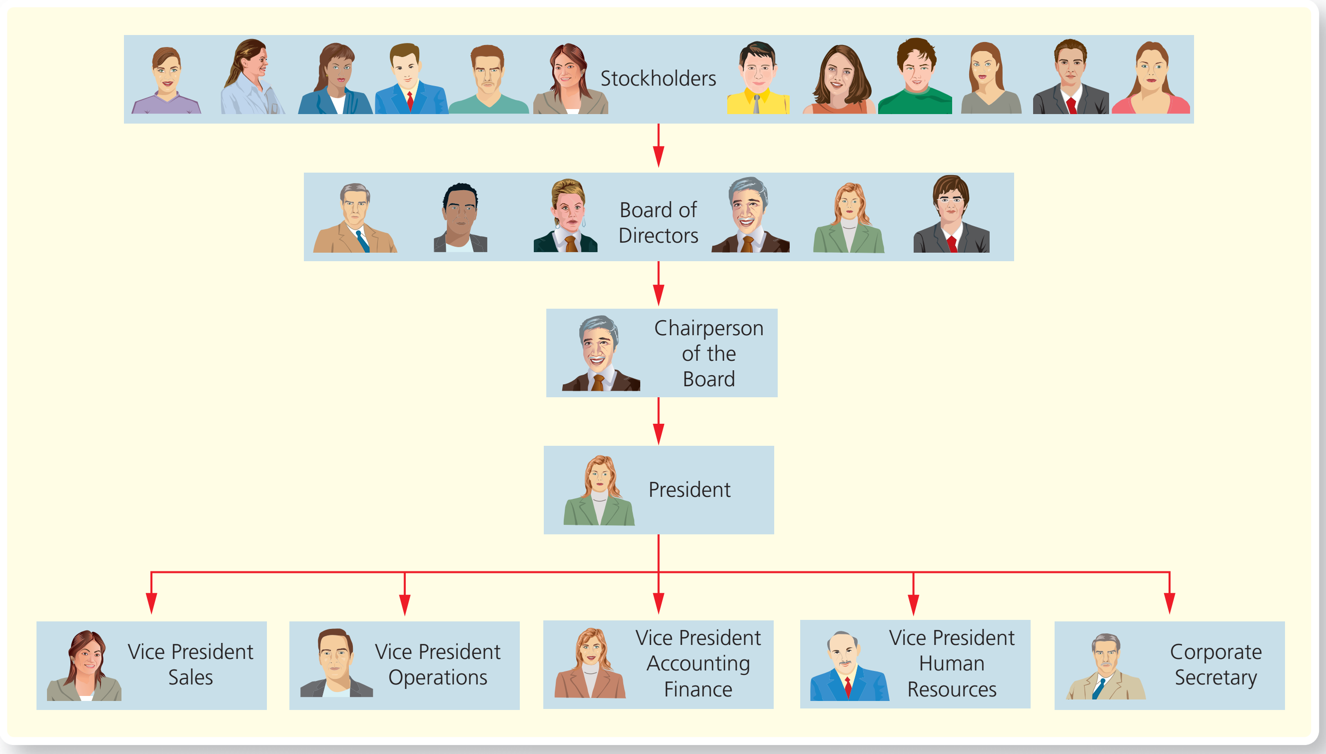
- Federal and state income taxes. Corporate earnings are subject to double taxation. First, corporations pay their own income tax on corporate income. Then, the stockholders pay personal income tax on the dividends that they receive from corporations. This is different from sole proprietorships and partnerships, which pay no business income tax. Instead, the tax falls solely on the individual owners.
- Annual franchise tax levied by the state. The franchise tax is paid to keep the corporation charter in force and enables the corporation to continue in business.

Government Regulation To protect persons who loan money to a corporation or who invest in its stock, states monitor the actions of corporations. Corporations are subjected to more governmental regulation than other forms of business, which is a disadvantage for corporations and can be expensive.

Organization of a Corporation As noted earlier, creation of a corporation begins when its organizers, called the incorporators, obtain a charter from the state. The charter includes the authorization for the corporation to issue a certain number of shares of stock, which represent the ownership in the corporation. The incorporators pay fees, sign the charter, and file the required documents with the state. Once the first share of stock is issued, the corporation comes into existence. The incorporators agree to a set of bylaws, which act as the constitution for governing the corporation. Bylaws are the rule book that guides the corporation.

The ultimate control of the corporation rests with the stockholders, who normally receive one vote for each share of stock they own. The stockholders elect the members of the board of directors, which sets policy for the corporation and appoints the officers. The board elects a chairperson, who usually is the most powerful person in the corporation. The board also designates the president, who as chief operating officer manages day-to-day operations. Most corporations also have vice presidents in charge of sales, operations, accounting and finance, and other key areas. Exhibit 1-5 shows the authority structure in a corporation.

Exhibit 1-5 | **Structure of a Corporation**



In order to demonstrate the economic entity assumption and several other concepts in this chapter, we will use a fictitious corporation—Smart Touch Learning—an e-learning business that specializes in providing online courses in accounting, economics, marketing, and management. This fictitious business will be used often throughout the book.

Assume Sheena Bright started the business by organizing it as a corporation. She contributed cash of $30,000 in exchange for stock of $30,000. Following the economic entity assumption, the $30,000 is recorded separately from Sheena's personal assets, such as her clothing and car. To mix the $30,000 of business cash with Sheena's personal assets would make it difficult to measure the success or failure of Smart Touch Learning. The economic entity assumption requires that each organization be separate from other businesses and from the owners.

Cost Principle
A principle that states that acquired assets and services should be recorded at their actual cost.

The Cost Principle

The **cost principle** states that acquired assets and services should be recorded at their actual cost (also called *historical cost*). The cost principle means we record a transaction at the amount shown on the receipt—the actual amount paid. Even though the purchaser may believe the price is a bargain, the item is recorded at the price actually paid and not at the "expected" cost. For example, assume our fictitious company Smart Touch Learning purchased land for $20,000. The business might believe the land is instead worth $25,000. The cost principle requires that Smart Touch Learning record the land at $20,000, not $25,000.

The cost principle also holds that the accounting records should continue reporting the historical cost of an asset over its useful life. Why? Because cost is a reliable measure. Suppose Smart Touch Learning holds the land for six months. During that time land prices rise, and the land could be sold for $30,000. Should its accounting value—the figure on the books—be the actual cost of $20,000 or the current market value of $30,000? According to the cost principle, the accounting value of the land would remain at the actual cost of $20,000.

IFRS

Under international reporting standards, the company would be allowed to restate and report the land at $30,000. The ability to report some assets and liabilities at their current fair value each year under international standards is a significant difference from U.S. rules.

The Going Concern Assumption

Going Concern Assumption
Assumes that the entity will remain in operation for the foreseeable future.

Another reason for measuring assets at historical cost is the **going concern assumption**. This assumes that the entity will remain in operation for the foreseeable future. Under the going concern assumption, accountants assume that the business will remain in operation long enough to use existing resources for their intended purpose.

The Monetary Unit Assumption

In the United States, we record transactions in dollars because the dollar is the medium of exchange. The value of a dollar changes over time, and a rise in the price level is called *inflation*. During periods of inflation, a dollar will purchase less. But accountants assume that the dollar's purchasing power is stable. This is the basis of the **monetary unit assumption**, which requires that the items on the financial statements be measured in terms of a monetary unit.

Monetary Unit Assumption
The assumption that requires the items on the financial statements to be measured in terms of a monetary unit.

International Financial Reporting Standards

The concepts and principles that we have discussed so far apply to businesses that follow U.S. GAAP and are traded on a U.S. stock exchange, such as the New York Stock Exchange. The SEC requires that U.S. businesses follow U.S. GAAP. Companies who are incorporated in or do significant business in another country might be required to publish financial statements using **International Financial Reporting Standards (IFRS)**, which are published by the **International Accounting Standards Board (IASB)**. IFRS is a set of global accounting standards that are used or required by more than 120 nations. They are generally less specific and based more on principle than U.S. GAAP. IFRS leaves more room for professional judgment. For example, unlike U.S. GAAP, IFRS allows periodic revaluation of certain assets and liabilities to restate them to market value, rather than keeping them at historical cost. At one point in time it was thought that the SEC would endorse IFRS. However, the SEC has backed away from this strategy and is currently considering whether a single set of global accounting standards is achievable.

International Financial Reporting Standards (IFRS)
A set of global accounting guidelines, formulated by the *International Accounting Standards Board (IASB).*

International Accounting Standards Board (IASB)
The private organization that oversees the creation and governance of *International Financial Reporting Standards (IFRS).*

Ethics in Accounting and Business

Ethical considerations affect accounting. Investors and creditors need relevant and faithfully representative information about a company that they are investing in or lending money to. Companies want to be profitable and financially strong to attract investors and attempt to present their financial statements in a manner that portrays the business in the best possible way. Sometimes these two opposing viewpoints can cause conflicts of interest. For example, imagine a company that is facing a potential million-dollar lawsuit due to a defective product. The company might not want to share this information with investors because it would potentially hurt the business's profitability. On the other hand, investors would want to know about the pending lawsuit so that they could make an informed decision about investing in the business. To handle these conflicts of interest and to provide reliable information, the SEC requires publicly held companies to have their financial statements audited by independent accountants. An **audit** is an examination of a company's financial statements and records. The independent accountants then issue an opinion that states whether the financial statements give a fair picture of the company's financial situation.

Audit
An examination of a company's financial statements and records.

The vast majority of accountants do their jobs professionally and ethically, but we often don't hear about them. Unfortunately, only those who cheat make the headlines. In recent years, we have seen many accounting scandals.

In response to the Enron and WorldCom reporting scandals, the U.S. government took swift action. It passed the **Sarbanes-Oxley Act (SOX)**, intended to curb financial scandals. SOX requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports. In addition, SOX made it a criminal offense to falsify financial statements. The Sarbanes-Oxley Act also created a new watchdog agency, the Public Company Accounting Oversight Board (PCAOB), to monitor the work of independent accountants who audit public companies. More recent scandals, such as the Bernie Madoff scandal in which Mr. Madoff pleaded guilty to defrauding thousands of investors by filing falsified trading reports, have further undermined the public's faith in financial reporting. This may result in more legislation for future reporting.

Sarbanes-Oxley Act (SOX)
Requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports.

Try It!

Match the accounting terminology to the definitions.

7. Cost principle	**a.** oversees the creation and governance of accounting standards in the United States
8. GAAP	**b.** requires an organization to be a separate economic unit
9. Faithful representation	**c.** oversees U.S. financial markets
10. SEC	**d.** states that acquired assets and services should be recorded at their actual cost
11. FASB	**e.** creates International Financial Reporting Standards
12. Monetary unit assumption	**f.** the main U.S. accounting rule book
13. Economic entity assumption	**g.** assumes that an entity will remain in operation for the foreseeable future
14. Going concern assumption	**h.** assumes that items on the financial statements are recorded in a monetary unit
15. IASB	**i.** requires information to be complete, neutral, and free from material error

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S1-2 through S1-5. MyAccountingLab

WHAT IS THE ACCOUNTING EQUATION?

Learning Objective 3
Describe the accounting equation, and define assets, liabilities, and equity

The basic tool of accounting is the **accounting equation**. It measures the resources of a business (what the business owns or has control of) and the claims to those resources (what the business owes to creditors and to the owners). The accounting equation is made up of three parts—assets, liabilities, and equity—and shows how these three parts are related. Assets appear on the left side of the equation, and the liabilities and equity appear on the right side.

Assets = Liabilities + Equity

Remember, the accounting equation is an equation—so the left side of the equation always equals the right side of the equation.

Accounting Equation
The basic tool of accounting, measuring the resources of the business (what the business owns or has control of) and the claims to those resources (what the business owes to creditors and to the owners). Assets = Liabilities + Equity.

Example: If a business has assets of $230,000 and liabilities of $120,000, its equity must be $110,000 ($230,000 − $120,000).

Assets	=	Liabilities	+	Equity
$230,000	=	$120,000	+	?
$230,000	=	$120,000	+	$110,000

Assets

Assets
Economic resources that are expected to benefit the business in the future. Something the business owns or has control of.

An **asset** is an economic resource that is expected to benefit the business in the future. Assets are something of value that the business owns or has control of. Cash, merchandise inventory, furniture, and land are examples of assets.

Liabilities

Liabilities
Debts that are owed to *creditors*.

Claims to those assets come from two sources: liabilities and equity. **Liabilities** are debts that are owed to creditors. Liabilities are something the business owes and represent the creditors' claims on the business's assets. For example, a creditor who has loaned money to a business has a claim to some of the business's assets until the business pays the debt. Many liabilities have the word *payable* in their titles. Examples include accounts payable, notes payable, and salaries payable.

Equity

Equity
The owners' claims to the assets of the business.

The owners of a corporation are referred to as stockholders (also called *shareholders*). The owners' claims to the assets of the business are called **equity** (also called *stockholders' equity*). Equity represents the amount of assets that are left over after the company has paid its liabilities. It is the company's net worth.

Contributed Capital
Owner contributions to a corporation.

Revenues
Amounts earned from delivering goods or services to customers.

Equity increases with owner contributions and revenues. Owner contributions to a corporation are referred to as **contributed capital**. A stockholder can contribute cash or other assets (such as equipment) to the business and receive capital. Equity is also increased by revenues. **Revenues** are earnings that result from delivering goods or services to customers. Examples of revenues are sales revenue, service revenue, and rent revenue.

Expenses
The cost of selling goods or services.

Equity decreases with expenses and distributions to owners. **Expenses** are the cost of selling goods or services. Expenses are the opposite of revenues and, therefore, decrease equity. Examples of expenses are rent expense, salaries expense, advertising expense, and utilities expense.

Dividend
A distribution of a corporation's earnings to stockholders.

A profitable corporation may make distributions to stockholders in the form of **dividends**. Dividends can be paid in the form of cash, stock, or other property. Dividends are not expenses. A corporation may or may not make dividend payments to the stockholders. Dividends are the opposite of owner contributions and, therefore, decrease equity.

Common Stock
Represents the basic ownership of a corporation.

Equity consists of two main components: contributed capital and retained earnings. Contributed capital (also called *paid-in capital*) is the amount invested in the corporation by its owners, the stockholders. The basic element of contributed capital is stock, which the corporation issues to the stockholders as evidence of their ownership. **Common stock** represents the basic ownership of every corporation.

Retained Earnings
Equity earned by profitable operations of a corporation that is not distributed to stockholders.

Retained earnings is the equity earned by profitable operations that is not distributed to stockholders. There are three types of events that affect retained earnings: dividends, revenues, and expenses. Dividends represent decreases in retained earnings through the distribution of cash, stock, or other property to stockholders. Revenues are increases in retained earnings from delivering goods or services to customers. Revenues are earnings. For example, if Smart Touch Learning provided e-learning services and earned $5,500 of revenue, the business's retained earnings increased by $5,500. Expenses are the decreases in retained earnings that result from operations. For example, Smart Touch Learning paid salaries of $1,200 to its employees, and that is an expense that decreases retained earnings.

The accounting equation can now be expanded to show the components of equity.

$$\underline{\textbf{ASSETS}} = \underline{\textbf{LIABILITIES}} + \overset{\textbf{EQUITY}}{\overline{\overset{\textbf{Contributed Capital}}{\overline{\text{Common Stock}}} + \overset{\textbf{Retained Earnings}}{\overline{- \text{Dividends} + \text{Revenues} - \text{Expenses}}}}}$$

Businesses strive for net income. When revenues are greater than expenses, the result of operations is a profit or **net income**. When expenses are greater than revenues, the result is a **net loss**.

Net Income
The result of operations that occurs when total revenues are greater than total expenses.

Net Loss
The result of operations that occurs when total expenses are greater than total revenues.

Try It!

16. Using the expanded accounting equation, solve for the missing amount.

Assets	$ 71,288
Liabilities	2,260
Common Stock	?
Dividends	14,420
Revenues	53,085
Expenses	28,675

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S1-6 through S1-8. MyAccountingLab

HOW DO YOU ANALYZE A TRANSACTION?

Learning Objective 4
Use the accounting equation to analyze transactions

Accounting is based on actual transactions. A **transaction** is any event that affects the financial position of the business *and* can be measured with faithful representation. Transactions affect what the company has or owes or its net worth. Many events affect a company, including economic booms and recessions. Accountants, however, do not record the effects of those events. An accountant records only those events that have dollar amounts that can be measured reliably, such as the purchase of a building, a sale of merchandise, and the payment of rent.

Transaction
An event that affects the financial position of the business and can be measured with faithful representation

Transaction Analysis for Smart Touch Learning

To illustrate accounting for a business, we'll use Smart Touch Learning, the business introduced earlier. We'll account for the transactions of Smart Touch Learning during November 2016 and show how each transaction affects the accounting equation.

Transaction 1—Owner Contribution

Assume Sheena Bright contributes $30,000 cash to Smart Touch Learning, a corporation, in exchange for stock. The e-learning business receives $30,000 cash and issues common stock to Sheena Bright. The effect of this transaction on the accounting equation of the business is as follows:

	ASSETS		LIABILITIES	+	EQUITY
					Contributed Capital
	Cash	=			Common Stock
(1)	+30,000				+30,000

Let's take a close look at the transaction above following these steps:

Step 1: Identify the accounts and the account type. Each transaction must have at least two accounts but could have more. *The two accounts involved are Cash (Asset) and Common Stock (Equity).*

Step 2: Decide if each account increases or decreases. Remember to always view this from the *business's* perspective, not from the stockholders' or customers' perspective. *Cash increases.* The business has more cash than it had before. *Common Stock increases.* The business received a $30,000 contribution and issued stock.

Step 3: Determine if the accounting equation is in balance. For each transaction, the amount on the left side of the equation must equal the amount on the right side. *$30,000 = $30,000*

Transaction 2—Purchase of Land for Cash

The business purchases land for an office location, paying cash of $20,000. This transaction affects the accounting equation of Smart Touch Learning as follows:

	ASSETS				LIABILITIES	+	EQUITY
							Contributed Capital
	Cash	+	Land	=		+	Common Stock
Bal.	$30,000						$30,000
(2)	−20,000		+20,000				
Bal.	$10,000	+	$20,000				$30,000

Let's review the transaction using the steps we learned:

Step 1: Identify the accounts and the account type. *The two accounts involved are Cash (Asset) and Land (Asset).*

Step 2: Decide if each account increases or decreases. *Cash decreases.* The business paid cash. *Land increases.* The business now has land.

Step 3: Determine if the accounting equation is in balance. *$10,000 + $20,000 = $30,000*

Transaction 3—Purchase of Office Supplies on Account

Smart Touch Learning buys office supplies on account (credit), agreeing to pay $500 within 30 days. This transaction increases both the assets and the liabilities of the business as follows:

	ASSETS						LIABILITIES	+	EQUITY
									Contributed Capital
	Cash	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock
Bal.	$10,000			+	$20,000				$30,000
(3)			+500				+500		
Bal.	$10,000	+	$500	+	$20,000		$500	+	$30,000

Step 1: Identify the accounts and the account type. *The two accounts involved are Office Supplies (Asset) and Accounts Payable (Liability).* Office Supplies is an asset, not an expense, because the supplies aren't used up yet but will be in the future. The liability created by purchasing "on account" is an **accounts payable**, which is a short-term liability that will be paid in the future. A payable is always a liability.

Accounts Payable
A short-term liability that will be paid in the future.

Step 2: Decide if each account increases or decreases. *Office Supplies increases.* The business now has more office supplies than it had before. *Accounts Payable increases.* The business now owes more debt than it did before.

Step 3: Determine if the accounting equation is in balance. *$10,000 + $500 + $20,000 = $500 + $30,000*

> Notice how the steps help when analyzing transactions. It's important that, as you are learning, you use the steps to complete the transactions. Moving forward, try writing the steps out yourself before looking at the transaction analysis.

Transaction 4—Earning of Service Revenue for Cash

Smart Touch Learning earns service revenue by providing training services for clients. The business earns $5,500 of revenue and collects this amount in cash. The effect on the accounting equation is an increase in Cash and an increase in Service Revenue as follows:

	ASSETS						LIABILITIES	+	EQUITY		
									Contributed Capital	+	Retained Earnings
	Cash	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	+	Service Revenue
Bal.	$10,000	+	$500	+	$20,000		$500	+	$30,000		
(4)	+5,500										+5,500
Bal.	$15,500	+	$500	+	$20,000		$500	+	$30,000	+	$5,500

A revenue transaction grows the business, as shown by the increases in assets and equity.

Transaction 5—Earning of Service Revenue on Account

Smart Touch Learning performs a service for clients who do not pay immediately. The business receives the clients' promise to pay $3,000 within one month. This promise is an asset, an **accounts receivable**, because the business expects to collect the cash in the future. In accounting, we say that Smart Touch Learning performed this service *on account*. It is in performing the service (doing the work), not collecting the cash, that the company *earns*

Accounts Receivable
The right to receive cash in the future from customers for goods sold or for services performed.

the revenue. As in Transaction 4, increasing revenue increases equity. Smart Touch Learning records the earning of $3,000 of revenue on account as follows:

	ASSETS								LIABILITIES	+	EQUITY		
											Contributed Capital	+	Retained Earnings
	Cash	+	Accounts Receivable	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	+	Service Revenue
Bal.	$15,500			+	$500	+	$20,000		$500	+	$30,000	+	$5,500
(5)			+3,000										+3,000
Bal.	$15,500	+	$3,000	+	$500	+	$20,000		$500	+	$30,000	+	$8,500

The term "on account" can be used to represent either Accounts Receivable or Accounts Payable. If the business will be receiving cash in the future, the company will record an Accounts Receivable. If the business will be paying cash in the future, the company will record an Accounts Payable.

Transaction 6—Payment of Expenses with Cash

The business pays $3,200 in cash expenses: $2,000 for office rent and $1,200 for employee salaries. The effects on the accounting equation are as follows:

	ASSETS								LIABILITIES	+	EQUITY						
											Contributed Capital	+	Retained Earnings				
	Cash	+	Accounts Receivable	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	+	Service Revenue	−	Rent Expense	−	Salaries Expense
Bal.	$15,500	+	$3,000	+	$500	+	$20,000		$500	+	$30,000	+	$8,500				
(6)	−3,200														−2,000		−1,200
Bal.	$12,300	+	$3,000	+	$500	+	$20,000		$500	+	$30,000	+	$8,500	−	$2,000	−	$1,200

Expenses have the opposite effect of revenues. Expenses shrink the business, as shown by the decreased balances of assets and equity. Each expense is recorded separately. We record the cash payment in a single amount for the sum of the expenses: $3,200 ($2,000 + $1,200). Notice that the accounting equation remains in balance ($12,300 + $3,000 + $500 + $20,000 = $500 + $30,000 + $8,500 − $2,000 − $1,200).

Transaction 7—Payment on Account (Accounts Payable)

The business pays $300 to the store from which it purchased office supplies in Transaction 3. In accounting, we say that the business pays $300 *on account*. The effect on the accounting equation is a decrease in Cash and a decrease in Accounts Payable as shown here:

	ASSETS								LIABILITIES	+	EQUITY						
											Contributed Capital	+	Retained Earnings				
	Cash	+	Accounts Receivable	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	+	Service Revenue	−	Rent Expense	−	Salaries Expense
Bal.	$12,300	+	$3,000	+	$500	+	$20,000		$500	+	$30,000	+	$8,500	−	$2,000	−	$1,200
(7)	−300								−300								
Bal.	$12,000	+	$3,000	+	$500	+	$20,000		$200	+	$30,000	+	$8,500	−	$2,000	−	$1,200

The payment of cash on account has no effect on the amount of Office Supplies (Asset). Smart Touch Learning has not increased the amount of its office supplies; instead, it is paying off a liability (Accounts Payable decreased $300) with cash (Cash decreased $300). **To record an increase to Office Supplies, in this transaction, would be accounting for the purchase of office supplies twice.** We have already recorded the purchase of office supplies in Transaction 3; in this transaction, we are now ready to record only the payment on account.

Why didn't we record an increase to Office Supplies? We are making a payment for the supplies; wouldn't we increase Office Supplies and decrease Cash?

Transaction 8—Collection on Account (Accounts Receivable)

In Transaction 5, the business performed services for clients on account. Smart Touch Learning now collects $2,000 from a client. We say that Smart Touch Learning collects the cash *on account*. The business will record an increase in the asset Cash. Should it also record an increase in Service Revenue? No, because the business already recorded the revenue when it earned the revenue in Transaction 5. The phrase "collect cash on account" means to record an increase in Cash and a decrease in Accounts Receivable. Accounts Receivable is decreased because the $2,000 that the business was to collect at some point in the future is being collected today. The effect on the accounting equation is as follows:

	ASSETS								**LIABILITIES**	**+**	**EQUITY**						
											Contributed Capital	**+**	**Retained Earnings**				
	Cash	+	Accounts Receivable	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	+	Service Revenue	−	Rent Expense	−	Salaries Expense
Bal.	$12,000	+	$3,000	+	$500	+	$20,000		$200	+	$30,000	+	$8,500	−	$2,000	−	$1,200
(8)	+2,000		−2,000														
Bal.	$14,000	+	$1,000	+	$500	+	$20,000		$200	+	$30,000	+	$8,500	−	$2,000	−	$1,200

This transaction is recorded as an increase in one asset (Cash) and a decrease in another asset (Accounts Receivable). Is the accounting equation still in balance? Yes. **As long as you record an increase and decrease of the same amount on one side of the accounting equation, the accounting equation remains in balance.** In other words, total assets, liabilities, and equity are all unchanged from the preceding total. Why? Because Smart Touch Learning exchanged one asset (Cash) for another (Accounts Receivable), causing a zero effect on the total amount of assets in the accounting equation (+$2,000 − $2,000 = $0).

Don't I have to put an amount on the left side of the accounting equation and an amount on the right side of the accounting equation for the equation to balance?

Transaction 9—Payment of Cash Dividend

Smart Touch Learning distributes a $5,000 cash dividend to the stockholder, Sheena Bright. The effect on the accounting equation is:

	ASSETS								**LIABILITIES**	**+**	**EQUITY**								
											Contributed Capital	**+**	**Retained Earnings**						
	Cash	+	Accounts Receivable	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	−	Dividends	+	Service Revenue	−	Rent Expense	−	Salaries Expense
Bal.	$14,000	+	$1,000	+	$500	+	$20,000		$200	+	$30,000			+	$8,500	−	$2,000	−	$1,200
(9)	−5,000												−5,000						
Bal.	$ 9,000	+	$1,000	+	$500	+	$20,000		$200	+	$30,000	−	$5,000	+	$8,500	−	$2,000	−	$1,200

The dividend decreases the business's cash and equity. *Dividends do not represent an expense because they are not related to the earning of revenue. Therefore, dividends do not affect the business's net income or net loss.*

A summary of all nine transactions for Smart Touch Learning is presented in Exhibit 1-6.

Exhibit 1-6 | **Analysis of Transactions, Smart Touch Learning**

1. Smart Touch Learning received $30,000 cash and issued common stock to Sheena Bright, stockholder.
2. Paid $20,000 cash for land.
3. Bought $500 of office supplies on account.
4. Received $5,500 cash from clients for service revenue earned.
5. Performed services for clients on account, $3,000.
6. Paid cash expenses: office rent, $2,000; employee salaries, $1,200.
7. Paid $300 on the accounts payable created in Transaction 3.
8. Collected $2,000 on the accounts receivable created in Transaction 5.
9. Paid cash dividends of $5,000 to stockholder, Sheena Bright.

	ASSETS								LIABILITIES	+	EQUITY								
											Contributed Capital	+	Retained Earnings						
	Cash	+	Accounts Receivable	+	Office Supplies	+	Land		Accounts Payable	+	Common Stock	−	Dividends	+	Service Revenue	−	Rent Expense	−	Salaries Expense
(1)	+30,000										+30,000								
(2)	−20,000						+20,000												
Bal.	$10,000					+	$20,000				$30,000								
(3)					+500				+500										
Bal.	$10,000			+	$500	+	$20,000		$500	+	$30,000								
(4)	+5,500														+5,500				
Bal.	$15,500			+	$500	+	$20,000	=	$500	+	$30,000			+	$5,500				
(5)			+3,000												+3,000				
Bal.	$15,500	+	$3,000	+	$500	+	$20,000		$500	+	$30,000			+	$8,500				
(6)	−3,200																−2,000		−1,200
Bal.	$12,300	+	$3,000	+	$500	+	$20,000		$500	+	$30,000			+	$8,500	−	$2,000	−	$1,200
(7)	−300								−300										
Bal.	$12,000	+	$3,000	+	$500	+	$20,000		$200	+	$30,000			+	$8,500	−	$2,000	−	$1,200
(8)	+2,000		−2,000																
Bal.	$14,000	+	$1,000	+	$500	+	$20,000		$200	+	$30,000			+	$8,500	−	$2,000	−	$1,200
(9)	−5,000												−5,000						
Bal.	$ 9,000	+	$1,000	+	$500	+	$20,000		$200	+	$30,000	−	$5,000	+	$8,500	−	$2,000	−	$1,200
	$30,500								$30,500										

Try It!

17. Using the information provided, analyze the effects of Lawlor Lawn Service's transactions on the accounting equation.

May 1	Received $1,700 and issued common stock.
May 3	Purchased a mower on account, $1,440.
May 5	Performed lawn services for client on account, $200.
May 17	Paid $60 cash for gas used in mower.
May 28	Paid cash dividends of $300.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S1-9 and S1-10. MyAccountingLab

HOW DO YOU PREPARE FINANCIAL STATEMENTS?

Learning Objective 5
Prepare financial statements

We have now recorded Smart Touch Learning's transactions, and they are summarized in Exhibit 1-6. Notice how total assets equal total liabilities plus equity ($30,500 = $30,500).

But a basic question remains: How will people actually use this information? The information in Exhibit 1-6 does not tell a lender whether Smart Touch Learning can pay off a loan. The exhibit does not tell whether the business is profitable.

To address these important questions, we need financial statements. **Financial statements** are business documents that are used to communicate information needed to make business decisions. There are four financial statements prepared. These statements are prepared in the order listed in Exhibit 1-7.

Financial Statements
Business documents that are used to communicate information needed to make business decisions.

Exhibit 1-7 | **Financial Statements**

Financial Statement	Information Provided and Purpose	How Is It Prepared?
Income Statement	Provides information about profitability for a particular period for the company.	Revenues − Expenses = Net Income or Net Loss
Statement of Retained Earnings	Informs users about how much of the earnings were kept and reinvested in the company.	Retained Earnings, Beginning + Net income or − Net loss for the period − Dividends for the period = Retained Earnings, Ending
Balance Sheet	Provides valuable information to financial statement users about economic resources the company has (assets) as well as debts the company owes (liabilities). Allows decision makers to determine their opinion about the financial position of the company.	Assets = Liabilities + Stockholders' Equity
Statement of Cash Flows	Reports on a business's cash receipts and cash payments for a period of time.	Cash flows from operating activities Cash flows from investing activities Cash flows from financing activities

Income Statement

Let's start by reviewing the **income statement**. The income statement (also called the *statement of earnings*) presents a summary of a business entity's revenues and expenses for a period of time, such as a month, quarter, or year. The income statement tells us whether the business enjoyed net income or suffered a net loss. Remember:

- Net income means total revenues are greater than total expenses.
- Net loss means total expenses are greater than total revenues.

It's important to remember that the only two types of accounts that are reported on the income statement are revenues and expenses. Exhibit 1-8 (on the next page) shows the income statement for Smart Touch Learning. Every income statement contains similar information.

Income Statement
Reports the *net income* or *net loss* of the business for a specific period.

The header includes the name of the business, the title of the statement, and the time period. An income statement always represents a period of time, for example, a month or year.

Exhibit 1-8 | **Income Statement**

SMART TOUCH LEARNING
Income Statement
Month Ended November 30, 2016

Revenues:		
Service Revenue		$ 8,500
Expenses:		
Rent Expense	$ 2,000	
Salaries Expense	1,200	
Total Expenses		3,200
Net Income		**$ 5,300**

The revenue accounts are always listed first and then subtotaled if necessary.

Net income is calculated as total revenues minus total expenses.

Each expense account is listed separately from largest to smallest and then subtotaled if necessary.

Statement of Retained Earnings

Statement of Retained Earnings
Reports how the company's retained earnings balance changed from the beginning to the end of the period.

The next statement prepared is the **statement of retained earnings**. The statement of retained earnings shows the changes in retained earnings for a business entity during a time period, such as a month, quarter, or year.

Review the statement of retained earnings for Smart Touch Learning in Exhibit 1-9. Notice that the net income for the month is the net income that was calculated on the income statement. This is the main reason why the income statement is prepared before

The header includes the name of the business, the title of the statement, and the time period. A statement of retained earnings always represents a period of time.

The beginning retained earnings is $0 because Smart Touch Learning began this month; therefore, it had no beginning retained earnings. The beginning retained earnings will always be the ending retained earnings from the previous time period.

Exhibit 1-9 | **Statement of Retained Earnings**

SMART TOUCH LEARNING
Statement of Retained Earnings
Month Ended November 30, 2016

Retained Earnings, November 1, 2016	$ 0
Net income for the month	5,300
	5,300
Dividends	(5,000)
Retained Earnings, November 30, 2016	**$ 300**

Net income is transferred from the income statement.

The dividends are subtracted from retained earnings. If there had been a net loss rather than a net income, this would also be subtracted.

the statement of retained earnings. The net income must first be calculated on the income statement and then carried to the statement of retained earnings.

Balance Sheet
Reports on the assets, liabilities, and stockholders' equity of the business as of a specific date.

Balance Sheet

The **balance sheet** (also called the *statement of financial position*) lists a business entity's assets, liabilities, and stockholders' equity as of a specific date, usually the end of a month, quarter, or year. **The balance sheet is a snapshot of the entity. An investor or creditor can quickly assess the overall health of a business by viewing the balance sheet.**

Review the balance sheet for Smart Touch Learning in Exhibit 1-10. Every balance sheet is prepared in a similar manner.

What does the balance sheet tell an investor or creditor?

Exhibit 1-10 | **Balance Sheet**

The heading again shows the name of the business and the title of the financial statement. Notice that the date is different. The balance sheet shows the date as a specific date, not a period of time.

Liabilities are listed separately and then totaled. Liabilities that are to be paid first are listed first.

SMART TOUCH LEARNING
Balance Sheet
November 30, 2016

Assets		**Liabilities**	
Cash	$ 9,000	Accounts Payable	$ 200
Accounts Receivable	1,000		
Office Supplies	500	**Stockholders' Equity**	
Land	20,000	Common Stock	30,000
		Retained Earnings	300
		Total Stockholders' Equity	30,300
Total Assets	**$ 30,500**	Total Liabilities and Stockholders' Equity	**$ 30,500**

Each asset account is listed separately and then totaled. Cash is always listed first.

The balance sheet must always balance. Assets = Liabilities + Stockholders' Equity

Retained Earnings is taken directly from the statement of retained earnings.

When you are preparing the financial statements, start by identifying which account goes on which statement. Each account will only go on one statement, except for Retained Earnings and Cash. For example, Service Revenue is only reported on the income statement. Liabilities, such as Accounts Payable, are only reported on the balance sheet. Cash and Retained Earnings appear on two statements. Cash is reported on the balance sheet and statement of cash flows, and Retained Earnings is reported on the statement of retained earnings and balance sheet.

ETHICS

What constitutes manipulating financial statements?

The board of directors of Xiaping Trading Company is meeting to discuss the past year's results before releasing financial statements to the bank. Wai Lee, the company's sole stockholder, comments, "This has not been a good year! Revenue is down, and expenses are way up. If we are not careful, we will report a loss for the third year in a row. I can temporarily transfer some land that I own into the company's name, and that will beef up our balance sheet. Brent, as accountant, can you shave $500,000 from expenses? Then we can probably get the bank loan that we need." What should Brent do? What would you do if you were Brent?

Solution

Brent should remind Wai Lee that the intent of the financial statements is to tell the truth about the company's performance and financial position. If Wai Lee does not intend to leave the land in the business, then she should not transfer it to the business for the sole intent of increasing the assets and equity of the business.

It is possible that Brent could "shave expenses" legally, if it meant reducing the amount of expenses that the business had. But if Wai Lee meant that Brent should reclassify expenses or delay the recognition of expenses in an effort to boost net income, then this would be false and dishonest.

Statement of Cash Flows
Reports on a business's cash receipts and cash payments for a specific period.

Would the purchase of land with a mortgage be reported on the statement of cash flows?

Statement of Cash Flows

The **statement of cash flows** reports the cash coming in (positive amounts) and the cash going out (negative amounts) during a period. It only reports transactions that involve cash because it reports the net increase or decrease in *cash* during the period and the ending *cash* balance. **If a transaction does not involve cash, such as the purchase of land with a mortgage, it will not be reported on the statement of cash flows.**

The statement of cash flows is divided into three distinct sections: operating, investing, and financing. *Operating activities* involve cash receipts for services and cash payments for expenses. *Investing activities* include the purchase and sale of land and equipment for cash. The third section, *financing activities*, includes cash contributions by stockholders and cash dividends paid to the stockholders.

Take a look at the statement of cash flows for Smart Touch Learning (Exhibit 1-11). Notice the important items that every statement of cash flows contains.

Exhibit 1-11 | **Statement of Cash Flows**

SMART TOUCH LEARNING
Statement of Cash Flows
Month Ended November 30, 2016

Cash flows from operating activities:		
Receipts:		
Collections from customers		$ 7,500
Payments:		
For rent	$ (2,000)	
For salaries	(1,200)	
For office supplies	(300)	(3,500)
Net cash provided by operating activities		4,000
Cash flows from investing activities:		
Acquisition of land	(20,000)	
Net cash used by investing activities		(20,000)
Cash flows from financing activities:		
Issued common stock	30,000	
Payment of cash dividends	(5,000)	
Net cash provided by financing activities		25,000
Net increase in cash		9,000
Cash balance, November 1, 2016		0
Cash balance, November 30, 2016		**$ 9,000**

The header includes the name of the business, the title of the statement, and the time period. A statement of cash flows always represents a period of time.

Each dollar amount is calculated by evaluating the cash column on Exhibit 1-6. For example, collections from customers is calculated by adding the cash received from customers in Transaction 4 ($5,500) plus Transaction 8 ($2,000).

Operating activities involve cash receipts for services provided and cash payments for expenses paid.

Investing activities include the purchase and sale of land and equipment for cash.

Financing activities include issuance of stock to stockholders and payment of cash dividends.

The ending cash balance must match the cash balance on the balance sheet.

Try It!

18. Using the following information, complete the income statement, statement of retained earnings, and balance sheet for DR Painting for the month of March 2016. The business began operations on March 1, 2016.

Accounts Receivable	$ 1,400	Salaries Expense	800
Accounts Payable	1,000	Service Revenue	7,000
Cash	22,300	Office Supplies	1,800
Stock issued during March	40,000	Truck	20,000
Dividends paid during March	1,500	Utilities Expense	200

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S1-11 through S1-15. MyAccountingLab

HOW DO YOU USE FINANCIAL STATEMENTS TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 6

Use financial statements and return on assets (ROA) to evaluate business performance

Each of the financial statements provides different information about the company to the users of the financial statements. Review Exhibit 1-7 for the information provided and the purpose of each financial statement.

Green Mountain Coffee Roasters, Inc.

In this chapter, we have reviewed the transactions and financial statements of Smart Touch Learning, a fictitious company. Now it's time to apply what we have learned to a real-world company. In each chapter, we will review the financial statements of **Green Mountain Coffee Roasters, Inc.** You will learn how to analyze its financial statements and apply the concepts presented in the chapter.

Take a moment to review the 2013 financial statements for Green Mountain in Appendix A, located at the end of your book, or online at **http://investor.gmcr.com**. Let's start by identifying the financial statements that we've discussed in this chapter. The income statement is presented on page A-5 of the Annual Report and is called the Consolidated Statements of Operations. Notice that the income statement calculates net income (revenue minus expenses). Green Mountain's net income for the year ending September 28, 2013, was $483,232,000.

Next the balance sheet is presented on page A-4 of the Annual Report. Can you find assets, liabilities, and equity? As we have learned in this chapter, Green Mountain's assets of $3,761,548,000 are equal to its liabilities and equity, $3,761,548,000.

Return on Assets (ROA)

Measures how profitably a company uses its assets. Net income / Average total assets.

Return on Assets (ROA)

One of the many tools that users of financial statements can use to determine how well a company is performing is the company's **return on assets (ROA)**. Return on assets measures

DECISIONS

How can individuals make decisions about investing in the stock market?

Lori Cummings just inherited $10,000 from her grandmother. She has decided that she will invest the money in the stock market. She is thinking about investing in one of her favorite clothing stores. The problem is she can't decide between Urban Outfitters or The Gap.

How should Lori decide between the companies? What resources should she use?

Solution

Lori should begin by reviewing the financial statements of each business. She can locate them on the companies' Web sites or on the Securities and Exchange Commission's Web site (**http://www.sec.gov/edgar.shtml**). She should review the income statements and compare net income. Which business was more profitable? She should look at the balance sheets, carefully reviewing each part of the accounting equation. What was the dollar amount of assets? How much debt does the business have? In addition, she could go online and research the individual companies using a Web site such as Yahoo! Finance. These Web sites provide news and information about the company, such as current headlines, key statistics, and industry comparisons.

Lori should also consider diversifying her investment. Diversifying involves investing in more than one company and in a variety of industries and companies of different sizes. Diversification reduces the risk of an investment. Lori should consider investing half of the $10,000 in a company in a different industry, such as her favorite restaurant or food manufacturer.

how profitably a company uses its assets. Return on assets is calculated by dividing net income by average total assets. Average total assets is calculated by adding the beginning and ending total assets for the time period and then dividing by two.

Return on assets = Net income / Average total assets
Average total assets = (Beginning total assets + Ending total assets) / 2

Let's take a moment to calculate Green Mountain's ROA and measure how profitably it uses its assets. On its 2013 income statement, Green Mountain reported net income of $483,232 (in thousands). The corporation reported beginning total assets (found on the balance sheet) of $3,615,789 (in thousands) and ending total assets of $3,761,548 (in thousands). Green Mountain's return on assets for 2013 is:

Return on assets = $483,232 / (($3,615,789 + $3,761,548) / 2)
= $483,232 / $3,688,669*
= 0.131 = 13.1%*

*rounded

How do we as an investor know if 13.1% is good or bad? We have to compare the return on assets of competing companies such as Caribou Coffee Company, Inc., **Starbucks Corporation**, and Dunkin' Brands Group, Inc. What if we told you that Dunkin' Brands Group, Inc.'s return on assets was 4.5%? Due to Green Mountain's higher ROA, we now know that Green Mountain has a stronger return on its assets than does Dunkin'. What does this mean? It means that Green Mountain produces more profit per every dollar of assets than Dunkin' does. As you learn more about accounting, you will explore more financial tools that are available to help investors evaluate a company's performance. Only after an investor looks at the big picture of a company will he or she have a good sense of the company's investment potential.

Try It!

19. Using the following information, calculate the return on assets (ROA).

Net income for November, 2016	$ 5,000
Total assets, November 1, 2016	76,000
Total assets, November 30, 2016	80,250

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S1-16. MyAccountingLab

REVIEW

> Things You Should Know

1. Why is accounting important?

- It's the language of business.
- Accounting is used by decision makers including individuals, businesses, investors, creditors, and taxing authorities.
- Accounting can be divided into two major fields: financial accounting and managerial accounting.
- Financial accounting is used by external decision makers, and managerial accounting is used by internal decision makers.
- All businesses need accountants. Accountants work in private, public, and governmental jobs.
- Accountants can be licensed as either a certified public accountant (CPA) or certified management accountant (CMA).

2. What are the organizations and rules that govern accounting?

- Generally Accepted Accounting Principles (GAAP) are the rules that govern accounting in the United States.
- The Financial Accounting Standards Board (FASB) is responsible for the creation and governance of accounting standards (GAAP).
- Economic entity assumption: Requires an organization to be a separate economic unit such as a sole proprietorship, partnership, corporation, or limited-liability company.
- Cost principle: Acquired assets and services should be recorded at their actual cost.
- Going concern assumption: Assumes that an entity will remain in operation for the foreseeable future.
- Monetary unit assumption: Assumes financial transactions are recorded in a monetary unit.

3. What is the accounting equation?

- Assets = Liabilities + Equity
    - Assets: Items the business owns or controls (examples: cash, furniture, land)
    - Liabilities: Items the business owes (examples: accounts payable, notes payable, salaries payable)
    - Equity: Stockholders' claims to the assets through contributed capital and retained earnings (examples: common stock, dividends, revenues, expenses)

4. How do you analyze a transaction?

- A transaction affects the financial position of a business and can be measured with faithful representation.
- Transactions are analyzed using three steps:

Step 1: Identify the accounts and account type (Asset, Liability, or Equity).

Step 2: Decide whether each account increases or decreases.

Step 3: Determine whether the accounting equation is in balance.

5. How do you prepare financial statements?

- Financial statements are prepared in the following order:
  1. Income Statement:
     - Reports the net income or net loss of a business for a specific period.
     - Revenues − Expenses = Net Income or Net Loss
  2. Statement of Retained Earnings:
     - Reports on the changes in retained earnings for a specific period.
     - Beginning Retained Earnings + Net Income (or − Net Loss) − Dividends = Ending Retained Earnings
  3. Balance Sheet:
     - Reports on an entity's assets, liabilities, and stockholders' equity as of a specific date.
     - Assets = Liabilities + Stockholders' Equity
  4. Statement of Cash Flows:
     - Reports on a business's cash receipts and cash payments for a specific period.
     - Includes three sections:
       - Cash flows from operating activities: Involves cash receipts for services and cash payments for expenses.
       - Cash flows from investing activities: Includes the purchase and sale of land and equipment for cash.
       - Cash flows from financing activities: Includes cash contributions by stockholders and cash dividends paid to the stockholders.

6. How do you use financial statements to evaluate business performance?

- Income statement evaluates profitability.
- Statement of retained earnings shows the amount of earnings that were kept and reinvested in the company.
- Balance sheet details the economic resources the company owns as well as debts the company owes.
- Statement of cash flows shows the change in cash.
- Return on assets (ROA) = Net income / Average total assets.

> Summary Problem

Ron Smith opens an apartment-locator business near a college campus. The company will be named Campus Apartment Locators. During the first month of operations, July 2016, the business completes the following transactions:

a. Smith contributes $35,000 to the business. The business issues common stock to Smith.

b. Purchases $350 of office supplies on account.

c. Pays cash of $30,000 to acquire a lot next to campus.

d. Locates apartments for clients and receives cash of $1,900.

e. Pays $100 on the accounts payable the business created in Transaction (b).

f. Pays cash expenses for office rent, $400, and utilities, $100.

g. Pays cash dividends of $1,200 to stockholders.

Requirements

1. Analyze the preceding transactions in terms of their effects on the accounting equation of Campus Apartment Locators. Use Exhibit 1-6 as a guide.
2. Prepare the income statement, statement of retained earnings, and balance sheet of the business after recording the transactions.
3. Calculate the return on assets (ROA).

> Solution

Requirement 1

	ASSETS						LIABILITIES	+	EQUITY								
									Contributed Capital	+	Retained Earnings						
	Cash	+	Office Supplies	+	Land	=	Accounts Payable	+	Common Stock	−	Dividends	+	Service Revenue	−	Rent Expense	−	Utilities Expense
(a)	+35,000								+35,000								
(b)			+350				+350										
Bal.	$35,000	+	$350				$350	+	$35,000								
(c)	−30,000				+30,000												
Bal.	$5,000	+	$350	+	$30,000		$350	+	$35,000								
(d)	+1,900												+1,900				
Bal.	$6,900	+	$350	+	$30,000		$350	+	$35,000			+	$1,900				
(e)	−100						−100										
Bal.	$6,800	+	$350	+	$30,000		$250	+	$35,000			+	$1,900				
(f)	−500														−400		−100
Bal.	$6,300	+	$350	+	$30,000		$250	+	$35,000			+	$1,900	−	$400	−	$100
(g)	−1,200										−1,200						
Bal.	$5,100	+	$350	+	$30,000		$250	+	$35,000	−	$1,200	+	$1,900	−	$400	−	$100
	$35,450						$35,450										

Requirement 2

CAMPUS APARTMENT LOCATORS
Income Statement
Month Ended July 31, 2016

Revenues:		
Service Revenue		$ 1,900
Expenses:		
Rent Expense	$ 400	
Utilities Expense	100	
Total Expenses		500
Net Income		**$ 1,400**

CAMPUS APARTMENT LOCATORS
Statement of Retained Earnings
Month Ended July 31, 2016

Retained Earnings July 1, 2016	$ 0
Net income for the month	1,400
	1,400
Dividends	(1,200)
Retained Earnings, July 31, 2016	**$ 200**

CAMPUS APARTMENT LOCATORS
Balance Sheet
July 31, 2016

Assets		**Liabilities**	
Cash	$ 5,100	Accounts Payable	$ 250
Office Supplies	350		
Land	30,000	**Stockholders' Equity**	
		Common Stock	35,000
		Retained Earnings	200
		Total Stockholders' Equity	35,200
Total Assets	**$ 35,450**	Total Liabilities and Stockholders' Equity	**$ 35,450**

Requirement 3

ROA = Net income / Average total assets
Average total assets = (Beginning total assets + Ending total assets) / 2
Average total assets = ($0 + $35,450) / 2 = $17,725
ROA = $1,400 / $17,725 = 0.079 = 7.9%*

*rounded

> Key Terms

Accounting (p. 26)
Accounting Equation (p. 35)
Accounts Payable (p. 39)
Accounts Receivable (p. 39)
Assets (p. 36)
Audit (p. 34)
Balance Sheet (p. 45)
Certified Management Accountants (CMAs) (p. 28)
Certified Public Accountants (CPAs) (p. 28)
Common Stock (p. 36)
Contributed Capital (p. 36)
Corporation (p. 31)
Cost Principle (p. 33)
Creditor (p. 28)
Dividend (p. 36)
Economic Entity Assumption (p. 30)
Equity (p. 36)
Expenses (p. 36)
Financial Accounting (p. 27)
Financial Accounting Standards Board (FASB) (p. 30)
Financial Statements (p. 43)
Generally Accepted Accounting Principles (GAAP) (p. 30)
Going Concern Assumption (p. 34)

Income Statement (p. 43)

International Accounting Standards Board (IASB) (p. 34)

International Financial Reporting Standards (IFRS) (p. 34)

Liabilities (p. 36)

Limited-Liability Company (LLC) (p. 31)

Managerial Accounting (p. 27)

Monetary Unit Assumption (p. 34)

Net Income (p. 37)

Net Loss (p. 37)

Partnership (p. 31)

Retained Earnings (p. 36)

Return on Assets (ROA) (p. 48)

Revenues (p. 36)

Sarbanes-Oxley Act (SOX) (p. 35)

Securities and Exchange Commission (SEC) (p. 30)

Sole Proprietorship (p. 31)

Statement of Cash Flows (p. 46)

Statement of Retained Earnings (p. 44)

Stockholder (p. 31)

Transaction (p. 37)

> Quick Check

Learning Objective 1

1. Accounting is the information system that
   a. measures business activities.
   b. communicates the results to decision makers.
   c. processes information into reports.
   d. All of the above.

Learning Objective 1

2. Which of the following is not an external user of a business's financial information?
   a. Taxing authorities
   b. Customers
   c. Employees
   d. Investors

Learning Objective 2

3. Generally Accepted Accounting Principles (GAAP) are currently formulated by the
   a. Financial Accounting Standards Board (FASB).
   b. Securities and Exchange Commission (SEC).
   c. Institute of Management Accountants (IMA).
   d. American Institute of Certified Public Accountants (AICPA).

Learning Objective 2

4. Which type of business organization is owned by only one owner?
   a. Corporation
   b. Partnership
   c. Sole proprietorship
   d. Items a, b, and c are all correct.

Learning Objective 2

5. Which of the following characteristics best describes a corporation?
   a. A business with a single owner
   b. Is not taxed
   c. Stockholders not personally liable for entity's debts
   d. Not a separate taxable entity

Learning Objective 2

6. Which of the following requires accounting information to be complete, neutral, and free from material error?
   a. Faithful representation concept
   b. Cost principle
   c. Economic entity assumption
   d. Going concern assumption

Learning Objective 3

7. At the end of a recent year, Global Cleaning Service, a full-service house and office cleaning service, had total assets of $3,630 and equity of $2,280. How much were Global Cleaning Service's liabilities?

   a. $5,910
   b. $3,630
   c. $1,350
   d. $2,280

Learning Objective 3

8. Consider the overall effects on Global Cleaning Service from selling and performing services on account for $6,400 and paying expenses totaling $2,500. What is Global Cleaning Service's net income or net loss?

   a. Net income of $3,900
   b. Net loss of $3,900
   c. Net income of $6,400
   d. Net income of $8,900

Learning Objective 4

9. Assume that Global Cleaning Service performed cleaning services for a department store on account for $180. How would this transaction affect Global Cleaning Service's accounting equation?

   a. Increase both assets and liabilities by $180
   b. Increase both assets and equity by $180
   c. Increase both liabilities and equity by $180
   d. Decrease liabilities by $180, and increase equity by $180

Learning Objective 5

10. The balance sheet reports the

   a. financial position on a specific date.
   b. results of operations on a specific date.
   c. financial position for a specific period.
   d. results of operations for a specific period.

Learning Objective 6

11. Assume Global Cleaning Service had net income of $570 for the year. Global Cleaning Service's beginning and ending total assets were $4,520 and $4,180, respectively. Calculate Global Cleaning Service's return on assets (ROA) for the year.

   a. 12.6%
   b. 13.6%
   c. 13.1%
   d. 7.63%

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is accounting?
2. Briefly describe the two major fields of accounting.
3. Describe the various types of individuals who use accounting information and how they use that information to make important decisions.
4. What are two certifications available for accountants? Briefly explain each certification.
5. What is the role of the Financial Accounting Standards Board (FASB)?
6. Explain the purpose of Generally Accepted Accounting Principles (GAAP), including the organization currently responsible for the creation and governance of these standards.

7. Describe the similarities and differences among the four different types of business entities discussed in the chapter.
8. A business purchases an acre of land for $5,000. The current market value is $5,550, and the land was assessed for property tax purposes at $5,250. What value should the land be recorded at, and which accounting principle supports your answer?
9. What does the going concern assumption mean for a business?
10. Which concept states that accounting information should be complete, neutral, and free from material error?
11. Financial statements in the United States are reported in U.S. dollars. What assumption supports this statement?
12. Explain the role of the International Accounting Standards Board (IASB) in relation to International Financial Reporting Standards (IFRS).
13. What is the accounting equation? Briefly explain each of the three parts.
14. How does retained earnings increase? What are the two ways that retained earnings decreases?
15. How is net income calculated? Define *revenues* and *expenses*.
16. What are the steps used when analyzing a business transaction?
17. List the four financial statements. Briefly describe each statement.
18. What is the calculation for return on assets (ROA)? Explain what ROA measures.

> Short Exercises

Learning Objective 1

S1-1 Identifying users of accounting information

For each user of accounting information, identify if the user would use financial accounting (FA) or managerial accounting (MA).

a. investor

b. banker

c. Internal Revenue Service

d. manager of the business

e. controller

f. stockholder

g. human resources director

h. creditor

Learning Objective 2

S1-2 Determining organizations that govern accounting

Suppose you are starting a business, Wholly Shirts, to imprint logos on T-shirts. In organizing the business and setting up its accounting records, you take your information to a CPA to prepare financial statements for the bank. Name the organization that governs the majority of the guidelines that the CPA will use to prepare financial statements for Wholly Shirts. What are those guidelines called?

Learning Objective 2

S1-3 Identifying types of business organizations

Chloe Michaels plans on opening Chloe Michaels Floral Designs. She is considering the various types of business organizations and wishes to organize her business with unlimited life and wants owners of the business to not be held personally liable for the business's debts. Additionally, Chloe wants the business to be a separate taxable entity. Which type of business organization will meet Chloe's needs best?

Learning Objective 2

S1-4 Identifying types of business organizations

You would like to start a cellular telephone equipment service business. You are considering organizing the business as a sole proprietorship. Identify the advantages and disadvantages of owning a sole proprietorship.

S1-5 Applying accounting assumptions and principles

Learning Objective 2

Michael McNamee is the proprietor of a property management company, Apartment Exchange, near the campus of Pensacola State College. The business has cash of $8,000 and furniture that cost $9,000 and has a market value of $13,000. The business debts include accounts payable of $6,000. Michael's personal home is valued at $400,000, and his personal bank account has a balance of $1,200. Consider the accounting principles and assumptions discussed in the chapter, and identify the principle or assumption that best matches the situation:

- **a.** Michael's personal assets are not recorded on the Apartment Exchange's balance sheet.
- **b.** The Apartment Exchange records furniture at its cost of $9,000, not its market value of $13,000.
- **c.** The Apartment Exchange reports its financial statements in U.S. dollars.
- **d.** Michael expects the Apartment Exchange to remain in operation for the foreseeable future.

S1-6 Using the accounting equation

Learning Objective 3

Seal Away Handyman Services has total assets for the year of $18,400 and total liabilities of $9,050.

Requirements

1. Use the accounting equation to solve for equity.
2. If next year assets increased by $4,000 and equity decreased by $2,940, what would be the amount of total liabilities for Seal Away Handyman Services?

S1-7 Using the accounting equation

Learning Objective 3

Roland's Overhead Doors reports the following financial information:

Assets	$ 42,600
Liabilities	17,220
Common Stock	26,240
Dividends	8,500
Revenues	12,080
Expenses	?

Requirements

1. Use the accounting equation to solve for the missing information.
2. Did Roland's Overhead Doors report net income or net loss?

S1-8 Identifying accounts

Learning Objective 3

Consider the following accounts:

- **a.** Accounts Payable
- **b.** Cash
- **c.** Common Stock
- **d.** Accounts Receivable
- **e.** Rent Expense
- **f.** Service Revenue
- **g.** Office Supplies
- **h.** Dividends
- **i.** Land
- **j.** Salaries Expense

Identify each account as Asset (A), Liability (L), or Equity (E).

Learning Objective 4

S1-9 Using the accounting equation to analyze transactions

Tiny Town Kennel earns service revenue by caring for the pets of customers. Tiny Town Kennel is organized as a corporation. During the past month, Tiny Town Kennel has the following transactions:

a. Received $520 cash for service revenue earned.

b. Paid $325 cash for salaries expense.

c. Investors contributed $1,000 to the corporation in exchange for common stock.

d. Earned $640 for service revenue, but the customer has not paid Tiny Town Kennel yet.

e. Received utility bill of $85, which will be paid next month.

f. Cash dividends of $100 were paid to stockholders.

Indicate the effects of the business transactions on the accounting equation for Tiny Town Kennel. Transaction (a) is answered as a guide.

a. Increase asset (Cash); Increase equity (Service Revenue)

Learning Objective 4

S1-10 Using the accounting equation to analyze transactions

Elaine's Inflatables earns service revenue by providing party planning services and inflatable playscapes. Elaine's Inflatables is organized as a corporation. During the past month, Elaine's Inflatables had the following transactions:

a. Investors contributed $10,000 to the corporation in exchange for common stock.

b. Purchased equipment for $5,000 on account.

c. Paid $400 for office supplies.

d. Earned and received $2,500 cash for service revenue.

e. Paid $400 for wages to employees.

f. Cash dividends of $1,000 were paid to stockholders.

g. Earned $1,000 for services provided. Customer has not yet paid.

h. Paid $1,000 for rent.

i. Received a bill for $250 for the monthly utilities. The bill has not yet been paid.

Indicate the effects of the business transactions on the accounting equation for Elaine's Inflatables. Transaction (a) is answered as a guide.

a. Increase asset (Cash); Increase equity (Common Stock)

Learning Objective 5

S1-11 Identifying accounts on the financial statements

Consider the following accounts:

a. Accounts Payable

b. Cash

c. Common Stock

d. Accounts Receivable

e. Rent Expense

f. Service Revenue

g. Office Supplies

h. Dividends

i. Land

j. Salaries Expense

Identify the financial statement (or statements) that each account would appear on. Use I for Income Statement, RE for Statement of Retained Earnings, and B for Balance Sheet.

Use the following information to answer Short Exercises S1-12 through S1-14.

Decorating Arrangements has just completed operations for the year ended December 31, 2016. This is the third year of operations for the company. The following data have been assembled for the business:

Insurance Expense	$ 2,000	Salaries Expense	$ 37,000
Service Revenue	80,000	Accounts Payable	4,300
Utilities Expense	500	Office Supplies	1,500
Rent Expense	11,000	Dividends	4,500
Common Stock	8,500	Accounts Receivable	7,500
Cash	7,000	Equipment	26,600
Retained Earnings, Jan. 1, 2016	4,800		

S1-12 Preparing the income statement

Learning Objective 5

Prepare the income statement of Decorating Arrangements for the year ended December 31, 2016.

S1-13 Preparing the statement of retained earnings

Learning Objective 5

Prepare the statement of retained earnings of Decorating Arrangements for the year ended December 31, 2016.

S1-14 Preparing the balance sheet

Learning Objective 5

Prepare the balance sheet of Decorating Arrangements as of December 31, 2016.

S1-15 Preparing the statement of cash flows

Learning Objective 5

Pushing Daisies Homes had the following cash transactions for the month ended July 31, 2016.

Cash receipts:	
Collections from customers	$ 24,000
Issued common stock	12,000
Cash payments:	
Rent	3,000
Utilities	900
Salaries	1,600
Purchase of equipment	18,000
Payment of cash dividends	3,500
Cash balance, July 1, 2016	11,000
Cash balance, July 31, 2016	20,000

Prepare the statement of cash flows for Pushing Daisies Homes for the month ended July 31, 2016.

Learning Objective 6

S1-16 Calculating Return on Assets (ROA)

Advanced Water Services had net income for the month of October of $34,400. Assets as of the beginning and end of the month totaled $325,000, and $535,000, respectively. Calculate Advanced Water Services' return on assets (ROA) for the month of October.

> Exercises

Learning Objective 1

E1-17 Identifying users of accounting information

For each of the users of accounting information, identify whether the user is an external decision maker (E) or an internal decision maker (I):

a. customer
b. company manager
c. Internal Revenue Service
d. lender
e. investor
f. controller
g. cost accountant
h. SEC

Learning Objective 2

E1-18 Using accounting vocabulary

Consider the following accounting terms and definitions, and match each term to the definition:

1. Sole proprietorship
2. Faithful representation
3. Partnership
4. IFRS
5. Corporation
6. Audit
7. Cost principle
8. FASB
9. Creditors
10. SEC

a. Set of global accounting guidelines, formulated by the IASB
b. Holds that fair market value should not be used over actual costs
c. Stands for Financial Accounting Standards Board
d. Owner is referred to as a proprietor
e. Asserts that accounting information should be complete, neutral, and free from material error
f. An examination of a company's financial statements and records
g. Has two or more owners (called partners)
h. U.S. governmental agency that oversees the U.S. financial markets
i. Type of entity that is designed to limit personal liability exposure of owners to the entity's debts
j. Person or business lending money

E1-19 Using accounting vocabulary

Learning Objectives 3, 5

Consider the following accounting terms and definitions, and match each term to the definition:

1. Accounting equation
2. Asset
3. Balance sheet
4. Expense
5. Income statement
6. Liability
7. Net income
8. Net loss
9. Revenue
10. Statement of cash flows
11. Statement of retained earnings

a. An economic resource that is expected to be of benefit in the future

b. Debts that are owed to creditors

c. Excess of total expenses over total revenues

d. Excess of total revenues over total expenses

e. The basic tool of accounting, stated as Assets = Liabilities + Equity

f. Decreases in equity that occur in the course of selling goods or services

g. Increases in equity that occur in the course of selling goods or services

h. Reports on a business's cash receipts and cash payments during a period

i. Reports on an entity's assets, liabilities, and stockholders' equity as of a specific date

j. Reports on an entity's revenues, expenses, and net income or loss for the period

k. Reports how the company's retained earnings balance changed from the beginning to the end of the period

E1-20 Using the accounting equation

Learning Objective 3

Compute the missing amount in the accounting equation for each entity from the financial information presented:

	Assets	Liabilities	Equity
Newton Gas	$?	$ 64,000	$ 80,000
Vegas Video Rentals	65,000	?	25,000
Cline's Grocery	200,000	43,000	?

E1-21 Using the accounting equation

Learning Objective 3

Alan Lightworks' balance sheet data at May 31, 2016, and June 30, 2016, follow:

	May 31, 2016	June 30, 2016
Total assets	$ 188,000	$ 244,000
Total liabilities	122,000	88,000

For each of the following situations with regard to common stock and dividends of a corporation, compute the amount of net income or net loss during June 2016.

a. The company issued $12,500 of common stock and paid no dividends.

b. The company issued no common stock. It paid cash dividends of $8,000.

c. The company issued $35,000 of common stock and paid cash dividends of $30,000.

Learning Objective 3

E1-22 Using the accounting equation

Morton Carpets started 2016 with total assets of $19,000 and total liabilities of $7,000. At the end of 2016, Morton total assets stood at $23,000 and total liabilities were $12,000.

Requirements

1. Did the stockholders' equity of Morton Carpets increase or decrease during 2016? By how much?
2. Identify the four possible reasons that stockholders' equity can change.

Learning Objective 3

E1-23 Using the accounting equation

During 2016, Peaceful River Spa reported revenue of $40,000. Total expenses for the year were $35,000. Peaceful River Spa ended the year with total assets of $23,000, and it owed debts totaling $9,000. At year-end 2015, the business reported total assets of $18,000 and total liabilities of $9,000.

Requirements

1. Compute Peaceful River Spa's net income for 2016.
2. Did Peaceful River Spa's stockholders' equity increase or decrease during 2016? By how much?

Learning Objective 3

E1-24 Using the accounting equation

The records of Meehan Company show the following at December 31, 2016:

Beginning:		**Equity:**	
Assets	$ 64,000	Common Stock	$ 13,000
Liabilities	44,000	Dividends	4,000
Ending:		Revenues	257,000
Assets	$ 54,000	Expenses	?
Liabilities	39,000	Retained Earnings, Jan. 1, 2016	7,000

Requirements

1. Compute the missing amount for Meehan Company. You will need to determine Retained Earnings, December 31, 2016, and total stockholders' equity.
2. Did Meehan earn a net income or suffer a net loss for the year? Compute the amount.

E1-25 Using the accounting equation to analyze transactions

Learning Objective 4

As the manager of a Papa Sean's restaurant, you must deal with a variety of business transactions. Give an example of a transaction that has each of the following effects on the accounting equation:

a. Increase one asset and decrease another asset.

b. Decrease an asset and decrease equity.

c. Decrease an asset and decrease a liability.

d. Increase an asset and increase equity.

e. Increase an asset and increase a liability.

E1-26 Using the accounting equation to analyze business transactions

Learning Objective 4

Indicate the effects of the following business transactions on the accounting equation of Vivian's Online Video store. Transaction (a) is answered as a guide.

a. Received cash of $10,000 from issuance of common stock.

Answer: Increase asset (Cash); Increase equity (Common Stock)

b. Earned video rental revenue on account, $2,800.

c. Purchased office furniture on account, $300.

d. Received cash on account, $400.

e. Paid cash on account, $100.

f. Rented videos and received cash of $200.

g. Paid monthly office rent of $1,000.

h. Paid $100 cash to purchase office supplies.

E1-27 Using the accounting equation to analyze business transactions

Learning Objective 4

Indicate the effects of the following business transactions on the accounting equation for Sam's Snack Foods, a supplier of snack foods. Transaction (a) is answered as a guide.

a. Sam's Snack Foods received cash from issuance of common stock to stockholders.

Answer: Increase asset (Cash); Increase equity (Common Stock)

b. Cash purchase of land for a building site.

c. Paid cash on accounts payable.

d. Purchased equipment; signed a note payable.

e. Performed service for a customer on account.

f. Employees worked for the week but will be paid next Tuesday.

g. Received cash from a customer on accounts receivable.

h. Borrowed money from the bank.

i. Cash dividends paid to stockholders.

j. Incurred utilities expense on account.

Learning Objective 4

E1-28 Using the accounting equation to analyze business transactions

The analysis of the first eight transactions of Advanced Accounting Service follows. Describe each transaction.

	ASSETS						LIABILITIES	+	EQUITY						
									Contributed Capital	+	Retained Earnings				
	Cash	+	Accounts Receivable	+	Equipment	=	Accounts Payable	+	Common Stock	−	Dividends	+	Service Revenue	−	Salaries Expense
1	+31,000								+31,000						
2			+3,800										+3,800		
Bal.	$31,000	+	$3,800						$31,000			+	$3,800		
3					+13,400		+13,400								
Bal.	$31,000	+	$3,800	+	$13,400		$13,400	+	$31,000			+	$3,800		
4	+190		−190												
Bal.	$31,190	+	$3,610	+	$13,400		$13,400	+	$31,000			+	$3,800		
5	−410				+410										
Bal.	$30,780	+	$3,610	+	$13,810		$13,400	+	$31,000			+	$3,800		
6	−8,000						−8,000								
Bal.	$22,780	+	$3,610	+	$13,810		$5,400	+	$31,000			+	$3,800		
7	+790												+790		
Bal.	$23,570	+	$3,610	+	$13,810		$5,400	+	$31,000			+	$4,590		
8	−1,500														−1,500
Bal.	$22,070	+	$3,610	+	$13,810		$5,400	+	$31,000			+	$4,590	−	$1,500

Learning Objective 4

E1-29 Using the accounting equation to analyze business transactions

Samantha Stamford opened a medical practice. During July, the first month of operation, the business, titled Samantha Stamford, M.D., experienced the following events:

July 6	Stamford contributed $65,000 in the business by opening a bank account in the name of S. Stamford, M.D. The corporation issued common stock to Stamford.
9	Paid $52,000 cash for land.
12	Purchased medical supplies for $1,600 on account.
15	Officially opened for business.
20	Paid cash expenses: employees' salaries, $1,500; office rent, $1,300; utilities, $350.
31	Earned service revenue for the month, $8,000, receiving cash.
31	Paid $800 on account.

Analyze the effects of these events on the accounting equation of the medical practice of Samantha Stamford, M.D., using the following format:

ASSETS						LIABILITIES	+	EQUITY										
								Contributed Capital	+	Retained Earnings								
Cash	+	Medical Supplies	+	Land	=	Accounts Payable	+	Common Stock	−	Dividends	+	Service Revenue	−	Salaries Expense	−	Rent Expense	−	Utilities Expense

E1-30 Preparing the financial statements

Learning Objective 5

Estella Osage publishes an online travel magazine. In need of cash, the business applies for a loan with National Bank. The bank requires borrowers to submit financial statements. With little knowledge of accounting, Estella Osage, a stockholder, does not know how to proceed.

Requirements

1. What are the four financial statements that the business will need to prepare?
2. Is there a specific order in which the financial statements must be prepared?
3. Explain how to prepare each statement.

Use the following information to answer Exercises E1-31 through E1-33.

The account balances of Wilford Towing Service at June 30, 2016, follow:

Equipment	$ 17,500	Service Revenue	$ 13,000
Office Supplies	1,300	Accounts Receivable	8,200
Notes Payable	6,900	Accounts Payable	6,000
Rent Expense	800	Retained Earnings, June 1, 2016	3,700
Cash	1,900	Salaries Expense	1,900
Dividends	2,000	Common Stock	4,000

E1-31 Preparing the income statement

Learning Objective 5

Net Income $10,300

Requirements

1. Prepare the income statement for Wilford Towing Service for the month ending June 30, 2016.
2. What does the income statement report?

E1-32 Preparing the statement of retained earnings

Learning Objective 5

Ending Retained Earnings $12,000

Requirements

1. Prepare the statement of retained earnings for Wilford Towing Service for the month ending June 30, 2016.
2. What does the statement of retained earnings report?

E1-33 Preparing the balance sheet

Learning Objective 5

Total Assets $28,900

Requirements

1. Prepare the balance sheet for Wilford Towing Service as of June 30, 2016.
2. What does the balance sheet report?

Use the following information to answer Exercises E1-34 through E1-36.

The assets, liabilities, and equities of Drought Design Studio have the following balances at December 31, 2016. The retained earnings was $31,000 at the beginning of the year with common stock of $20,000 and dividends of $55,000 at year end.

Notes Payable	$ 9,800	Office Furniture	$ 55,200
Rent Expense	22,000	Utilities Expense	6,500
Cash	3,100	Accounts Payable	3,700
Office Supplies	4,500	Service Revenue	159,200
Salaries Expense	62,000	Accounts Receivable	10,200
Property Tax Expense	1,200	Miscellaneous Expense	4,000

Learning Objective 5

Net Income $63,500

E1-34 Preparing the income statement

Prepare the income statement for Drought Design Studio for the year ending December 31, 2016.

Learning Objective 5

Ending Retained Earnings $39,500

E1-35 Preparing the statement of retained earnings

Prepare the statement of retained earnings for Drought Design Studio for the year ending December 31, 2016.

Learning Objective 5

Total Assets $73,000

E1-36 Preparing the balance sheet

Prepare the balance sheet for Drought Design Studio as of December 31, 2016.

Learning Objective 5

E1-37 Preparing the statement of cash flows

For each transaction, identify the appropriate section on the statement of cash flows to report the transaction. Choose from: Cash flows from operating activities (O), Cash flows from investing activities (I), Cash flows from financing activities (F), or Is not reported on the statement of cash flows (X). If reported on the statement, decide whether the transaction should be shown as a positive cash flow (+) or a negative cash flow (–):

a. The business received cash from the issuance of common stock.
b. Paid cash on accounts payable for office supplies purchased.
c. Performed services for a customer on account.
d. Cash dividends were paid to stockholders.
e. Received cash from a customer for services performed.
f. Purchased equipment with cash.
g. Paid rent for the month.
h. Purchased land; signed a note payable.
i. Paid employees wages for the week.
j. Incurred utility expense on account.

E1-38 Preparing the statement of cash flows

Learning Objective 5

Decrease in cash $9,300

Bean Town Food Equipment Company had the following transactions for the month ending February 29, 2016. Bean Town's cash balance on February 1, 2016, was $16,400.

Feb. 1	Common stock was issued to stockholders for $7,500 cash.
7	Purchased equipment for $2,500 on account.
14	Paid $18,000 cash for land.
17	Paid cash expenses: employees' salaries, $1,500; office rent, $1,800; utilities, $500.
23	Paid cash dividends of $3,000.
26	Earned service revenue for the month, $8,000, receiving cash.

Prepare the statement of cash flows of Bean Town Food Equipment Company for the month ended February 29, 2016.

E1-39 Calculating return on assets (ROA)

Learning Objective 6

Allyson Appliance Service had net income for the year of $40,000. In addition, the balance sheet reports the following balances:

	Jan. 1, 2016	Dec. 31, 2016
Notes Payable	$ 34,000	$ 54,000
Cash	39,000	20,200
Office Furniture	20,000	38,000
Building	155,000	155,000
Accounts Payable	9,500	10,000
Total Stockholders' Equity	198,300	214,200
Accounts Receivable	1,600	18,400
Equipment	22,000	46,000
Office Supplies	4,200	600

Calculate the return on assets (ROA) for Allyson Appliance Service the year ending December 31, 2016.

> Problems Group A

P1-40A Using the accounting equation for transaction analysis

Learning Objective 4

Cash $7,350

Missy Mansion opened a public relations firm called Solid Gold on August 1, 2016. The following amounts summarize her business on August 31, 2016:

	ASSETS				=	LIABILITIES +	EQUITY				
							Contributed Capital +	Retained Earnings			
	Cash	+ Accounts Receivable	+ Office Supplies	+ Land		Accounts Payable	+ Common Stock	− Dividends	+ Service Revenue	− Rent Expense	− Advertising Expense
Bal.	$2,400	+ $2,600	+ $0	+ $15,000		$3,000	+ $14,400		+ $2,600		

During September 2016, the business completed the following transactions:

a. Missy Mansion contributed $8,000 cash in exchange for common stock.
b. Performed service for a client and received cash of $1,300.
c. Paid off the beginning balance of accounts payable.
d. Purchased office supplies from OfficeMax on account, $400.
e. Collected cash from a customer on account, $2,200.
f. Cash dividends of $1,800 were paid to stockholders.
g. Consulted for a new band and billed the client for services rendered, $6,500.
h. Recorded the following business expenses for the month:
Paid office rent: $1,400.
Paid advertising: $350.

Analyze the effects of the transactions on the accounting equation of Solid Gold using the format presented on page 67.

Learning Objective 4

Cash $18,550

P1-41A Using the accounting equation for transaction analysis

Cameron Turnbull started a new business, Turnbull Gymnastics, and completed the following transactions during December:

Dec. 1	Cameron contributed $21,000 cash in exchange for common stock.
2	Received $2,400 cash from customers for services performed.
5	Paid $350 cash for office supplies.
9	Performed services for a customer and billed the customer for services rendered, $1,500.
10	Received $100 invoice for utilities due in two weeks.
15	Paid for advertising in the local paper, $300.
20	Paid utility invoice received on Dec. 10.
25	Collected cash in full from customer billed on Dec. 9.
28	Paid rent for the month, $2,800.
28	Paid $1,100 to assistant for wages.
30	Received $2,800 cash from customers for services performed.
31	Cash dividends of $4,500 were paid to stockholders.

Analyze the effects of the transactions on the accounting equation of Turnbull Gymnastics using a format similar to Exhibit 1-6.

P1-42A Preparing financial statements

Learning Objective 5

1. Net Income $97,800

Presented here are the accounts of Golden City Barbershop for the year ended December 31, 2016.

Land	$ 5,000	Common Stock	$ 25,000
Notes Payable	37,000	Accounts Payable	17,000
Property Tax Expense	2,700	Accounts Receivable	900
Dividends	32,000	Advertising Expense	13,000
Rent Expense	11,000	Building	157,000
Salaries Expense	61,000	Cash	3,800
Salaries Payable	900	Equipment	19,000
Service Revenue	195,000	Insurance Expense	2,500
Office Supplies	9,000	Interest Expense	7,000
Retained Earnings, 12/31/15	49,000		

Requirements

1. Prepare Golden City Barbershop's income statement.
2. Prepare the statement of retained earnings.
3. Prepare the balance sheet.

P1-43A Preparing financial statements

Learning Objective 5

b. Ending Retained Earnings $76,800

Click a Pix Photography works weddings and prom-type parties. The balance of retained earnings was $26,000 at December 31, 2015. At December 31, 2016, the business's accounting records show these balances:

Insurance Expense	$ 11,000	Accounts Receivable	$ 12,000
Cash	40,000	Notes Payable	9,000
Accounts Payable	6,000	Retained Earnings, Dec. 31, 2016	?
Advertising Expense	3,200	Salaries Expense	20,000
Service Revenue	95,000	Equipment	73,800
Dividends	10,000	Common Stock	34,000

Prepare the following financial statements for Click a Pix Photography for the year ended December 31, 2016:

a. Income statement.

b. Statement of retained earnings.

c. Balance sheet.

Learning Objective 5

Total Assets $47,100

P1-44A Preparing financial statements

The bookkeeper of Juniper Landscaping prepared the company's balance sheet while the accountant was ill. The balance sheet contains numerous errors. In particular, the bookkeeper knew that the balance sheet should balance, so he plugged in the retained earnings amount needed to achieve this balance. The retained earnings is incorrect. All other amounts are right, but some are out of place or not included in this statement. Prepare a corrected balance sheet.

JUNIPER LANDSCAPING
Balance Sheet
Month Ended September 30, 2016

Assets		**Liabilities**	
Cash	$ 4,500	Accounts Receivables	$ 2,500
Office Supplies	1,000	Dividends	13,000
Land	34,000	Service Revenue	43,000
Salaries Expense	2,600	Property Tax Expense	3,100
Office Furniture	6,300	Accounts Payable	3,400
Notes Payable	24,300	Retained Earnings	(75)
Rent Expense	225	**Stockholders' Equity**	
		Common Stock	8,000
Total Assets	**$ 72,925**	Total Liabilities	**$ 72,925**

Learning Objectives 4, 5

2b. Ending Retained Earnings $6,900

P1-45A Using the accounting equation for transaction analysis and preparing financial statements

Alfonso Sheen recently opened his own accounting firm, which he operates as a corporation. The name of the new entity is Alfonso Sheen, CPA. Sheen experienced the following events during the organizing phase of the new business and its first month of operations in 2016:

Feb. 5	Sheen deposited $70,000 in a new business bank account titled Alfonso Sheen, CPA. The business issued common stock to Sheen.
6	Paid $350 cash for letterhead stationery for new office.
7	Purchased office furniture for the office on account, $7,000.
10	Consulted with tax client and received $1,800 for services rendered.
11	Paid utilities, $400.
12	Finished tax hearings on behalf of a client and submitted a bill for accounting services, $11,000.
18	Paid office rent, $1,000.
25	Received amount due from client that was billed on February 12.
27	Paid full amount of accounts payable created on February 7.
29	Cash dividends of $4,500 were paid to stockholders.

Requirements

1. Analyze the effects of the events on the accounting equation of Alfonso Sheen, CPA. Use a format similar to Exhibit 1-6.
2. Prepare the following financial statements:
    - **a.** Income statement.
    - **b.** Statement of retained earnings.
    - **c.** Balance sheet.

P1-46A Using the accounting equation for transaction analysis and preparing financial statements

Learning Objectives 4, 5

2c. Total Assets $94,360

Angela Petrillo recently opened her own law office, which she operates as a corporation. The name of the new entity is Angela Petrillo, Attorney. Petrillo experienced the following events during the organizing phase of the new business and its first month of operation, March 2016. Some of the events were personal and did not affect the law practice. Others were business transactions and should be accounted for by the business.

Mar. 1	Sold personal investment in Amazon stock, which she had owned for several years, receiving $31,000 cash.
2	Deposited the $31,000 cash from the sale of the Amazon stock in her personal bank account.
3	Deposited $72,000 cash in a new business bank account titled Angela Petrillo, Attorney. The business issued common stock to Petrillo.
5	Paid $350 cash for ink cartridges for the printer.
7	Purchased computer for the law office, agreeing to pay the account, $5,500, within three months.
9	Received $2,500 cash from customers for services rendered.
15	Received bill from *The Lawyer* for magazine subscription, $340. (Use Miscellaneous Expense account.)
23	Finished court hearings on behalf of a client and submitted a bill for legal services, $18,000, on account.
28	Paid bill from *The Lawyer*.
30	Paid utilities, $1,300.
31	Received $1,800 cash from clients billed on Mar. 23.
31	Cash dividends of $2,000 were paid to stockholders.

Requirements

1. Analyze the effects of the preceding events on the accounting equation of Angela Petrillo, Attorney. Use a format similar to Exhibit 1-6.
2. Prepare the following financial statements:
    - **a.** Income statement.
    - **b.** Statement of retained earnings.
    - **c.** Balance sheet.

> Problems Group B

Learning Objective 4

Cash $8,150

P1-47B Using the accounting equation for transaction analysis

Meg Clifford opened a public relations firm called Dance Fever on August 1, 2016. The following amounts summarize her business on August 31, 2016:

	ASSETS					LIABILITIES +	EQUITY				
							Contributed Capital +	Retained Earnings			
	Cash +	Accounts Receivable +	Office Supplies +	Land	=	Accounts Payable +	Common Stock	− Dividends	+ Service Revenue −	Rent Expense −	Advertising Expense
Bal.	$2,100 +	$2,500 +	$0 +	$11,000		$6,000 +	$7,100		+ $2,500		

During September 2016, the business completed the following transactions:

a. Meg Clifford contributed $13,000 cash in exchange for common stock.

b. Performed service for a client and received cash of $1,200.

c. Paid off the beginning balance of accounts payable.

d. Purchased office supplies from OfficeMax on account, $1,000.

e. Collected cash from a customer on account, $1,500.

f. Cash dividends of $1,900 were paid to stockholders.

g. Consulted for a new band and billed the client for services rendered, $6,000.

h. Recorded the following business expenses for the month:

Paid office rent: $1,400.

Paid advertising: $350.

Analyze the effects of the transactions on the accounting equation of Dance Fever using the format presented above.

Learning Objective 4

Cash $19,775

P1-48B Using the accounting equation for transaction analysis

Cosmo Timmins started a new business, Timmins Gymnastics, and completed the following transactions during December:

Dec. 1	Cosmo contributed $20,000 cash in exchange for common stock.
2	Received $2,200 cash from customers for services performed.
5	Paid $350 cash for office supplies.
9	Performed services for a customer and billed the customer for services rendered, $4,500.
10	Received $100 invoice for utilities due in two weeks.
15	Paid for advertising in the local paper, $475.
20	Paid utility invoice received on Dec. 10.
25	Collected cash in full from customer billed on Dec. 9.
28	Paid rent for the month, $3,000.
28	Paid $1,500 to assistant for wages.
30	Received $2,000 cash from customers for services performed.
31	Cash dividends of $3,500 were paid to stockholders.

Analyze the effects of the transactions on the accounting equation of Timmins Gymnastics using a format similar to Exhibit 1-6.

Learning Objective 5

1. Net Income $74,900

P1-49B Preparing financial statements

Presented here are the accounts of Town and Country Realty for the year ended December 31, 2016:

Land	$ 5,000	Common Stock	$ 28,000
Notes Payable	36,000	Accounts Payable	14,000
Property Tax Expense	3,400	Accounts Receivable	1,000
Dividends	32,000	Advertising Expense	14,000
Rent Expense	10,000	Building	144,600
Salaries Expense	69,000	Cash	3,800
Salaries Payable	1,500	Equipment	13,000
Service Revenue	180,000	Insurance Expense	2,200
Office Supplies	12,000	Interest Expense	6,500
Retained Earnings, 12/31/15	57,000		

Requirements

1. Prepare Town and Country Realty's income statement.
2. Prepare the statement of retained earnings.
3. Prepare the balance sheet.

Learning Objective 5

b. Ending Retained Earnings $86,500

P1-50B Preparing financial statements

Precision Pics works weddings and prom-type parties. The balance of Retained Earnings was $26,000 at December 31, 2015. At December 31, 2016, the business's accounting records show these balances:

Insurance Expense	$ 14,000	Accounts Receivable	$ 7,000
Cash	38,000	Notes Payable	9,000
Accounts Payable	13,000	Retained Earnings, Dec. 31, 2016	?
Advertising Expense	3,500	Salaries Expense	21,000
Service Revenue	110,000	Equipment	96,500
Dividends	11,000	Common Stock	33,000

Prepare the following financial statements for Precision Pics for the year ended December 31, 2016:

a. Income statement.
b. Statement of retained earnings.
c. Balance sheet.

Learning Objective 5

Total Assets $47,400

P1-51B Preparing financial statements

The bookkeeper of Outdoor Life Landscaping prepared the company's balance sheet while the accountant was ill. The balance sheet contains numerous errors. In particular, the bookkeeper knew that the balance sheet should balance, so he plugged in the retained earnings amount needed to achieve this balance. The retained earnings is incorrect. All other amounts are right, but some are out of place or not included in this statement. Prepare a corrected balance sheet.

OUTDOOR LIFE LANDSCAPING
Balance Sheet
Month Ended March 31, 2016

Assets		**Liabilities**	
Cash	$ 4,800	Accounts Receivables	$ 2,300
Office Supplies	1,100	Dividends	16,000
Land	33,500	Service Revenue	43,000
Salaries Expense	2,500	Property Tax Expense	3,000
Office Furniture	6,200	Accounts Payable	3,100
Notes Payable	24,400	Retained Earnings	(5,550)
Rent Expense	350	**Stockholders' Equity**	
		Common Stock	11,000
Total Assets	**$ 72,850**	Total Liabilities	**$ 72,850**

Learning Objectives 4, 5

2c. Total Assets $76,700

P1-52B Using the accounting equation for transaction analysis and preparing financial statements

Andre Simmon recently opened his own accounting firm, which he operates as a corporation. The name of the new entity is Andre Simmon, CPA. Simmon experienced the following events during the organizing phase of the new business and its first month of operations in 2016.

Feb. 5	Simmon deposited $65,000 in a new business bank account titled Andre Simmon, CPA. The business issued common stock to Simmon.
6	Paid $300 cash for letterhead stationery for new office.
7	Purchased office furniture for the office on account, $6,800.
10	Consulted with tax client and received $3,300 for services rendered.
11	Paid utilities, $100.
12	Finished tax hearings on behalf of a client and submitted a bill for accounting services, $12,500.
18	Paid office rent, $1,000.
25	Received amount due from client that was billed on February 12.
27	Paid full amount of accounts payable created on February 7.
29	Cash dividends of $3,000 were paid to stockholders.

Requirements

1. Analyze the effects of the events on the accounting equation of Andre Simmon, CPA. Use a format similar to Exhibit 1-6.
2. Prepare the following financial statements:
    a. Income statement.
    b. Statement of retained earnings.
    c. Balance sheet.

P1-53B Using the accounting equation for transaction analysis and preparing financial statements

Learning Objectives 4, 5

2c. Total Assets $89,060

Ariana Peterson recently opened her own law office, which she operates as a corporation. The name of the new entity is Ariana Peterson, Attorney. Peterson experienced the following events during the organizing phase of the new business and its first month of operation, December 2016. Some of the events were personal and did not affect the law practice. Others were business transactions and should be accounted for by the business.

Dec. 1	Sold personal investment in Nike stock, which she had owned for several years, receiving $25,000 cash.
2	Deposited the $25,000 cash from the sale of the Nike stock in her personal bank account.
3	Deposited $65,000 cash in a new business bank account titled Ariana Peterson, Attorney. The business issued common stock to Peterson.
5	Paid $400 cash for ink cartridges for the printer.
7	Purchased computer for the law office, agreeing to pay the account, $6,800, within three months.
9	Received $2,900 cash from customers for services rendered.
15	Received bill from *The Lawyer* for magazine subscription, $300. (Use Miscellaneous Expense account.)
23	Finished court hearings on behalf of a client and submitted a bill for legal services, $18,000, on account.
28	Paid bill from *The Lawyer*.
30	Paid utilities, $840.
31	Received $2,800 cash from clients billed on Dec. 23.
31	Cash dividends of $2,500 were paid to stockholders.

Requirements

1. Analyze the effects of the preceding events on the accounting equation of Ariana Peterson, Attorney. Use a format similar to Exhibit 1-6.
2. Prepare the following financial statements:
    a. Income statement.
    b. Statement of retained earnings.
    c. Balance sheet.

> Continuing Problem

Problem P1-54 is the first problem in a sequence that begins an accounting cycle. The cycle is continued in Chapter 2 and completed in Chapter 5.

P1-54 Using the accounting equation for transaction analysis, preparing financial statements, and calculating return on assets (ROA)

Daniels Consulting began operations and completed the following transactions during December 2016:

Dec. 2	Stockholders contributed $20,000 cash in exchange for common stock.
2	Paid monthly office rent, $2,000.
3	Paid cash for a computer, $3,600. This equipment is expected to remain in service for five years.
4	Purchased office furniture on account, $3,000. The furniture should last for five years.
5	Purchased office supplies on account, $800.
9	Performed consulting service for a client on account, $2,500.
12	Paid utilities expenses, $150.
18	Performed service for a client and received cash of $2,100.
21	Received $2,400 in advance for client service to be performed in the future. (This increases the Unearned Revenue account, which is a liability. This account will be explained in more detail in Chapter 2.)
21	Hired an administrative assistant to be paid $2,055 on the 20th day of each month. The secretary begins work immediately.
26	Paid $200 on account.
28	Collected $400 on account.
30	Cash dividends of $1,000 were paid to stockholders.

Requirements

1. Analyze the effects of Daniels Consulting's transactions on the accounting equation. Use the format of Exhibit 1-6, and include these headings: Cash; Accounts Receivable; Office Supplies; Equipment; Furniture; Accounts Payable; Unearned Revenue; Common Stock; Dividends; Service Revenue; Rent Expense; and Utilities Expense.
2. Prepare the income statement of Daniels Consulting for the month ended December 31, 2016.
3. Prepare the statement of retained earnings for the month ended December 31, 2016.
4. Prepare the balance sheet as of December 31, 2016.
5. Calculate the return on assets for Daniels Consulting for December, 2016.

CRITICAL THINKING

> Decision Case 1-1

Let's examine a case using Greg's Tunes and Sal's Silly Songs. It is now the end of the first year of operations, and the stockholders want to know how well each business came out at the end of the year. Neither business kept complete accounting records, and no dividends were paid. The businesses throw together the following data at year-end:

Sal's Silly Songs:	
Total assets	$ 23,000
Common Stock	8,000
Total revenues	35,000
Total expenses	22,000
Greg's Tunes:	
Total liabilities	$ 10,000
Common Stock	6,000
Total expenses	44,000
Net income	9,000

To gain information for evaluating the businesses, the stockholders ask you several questions. For each answer, you must show your work to convince the stockholders that you know what you are talking about.

Requirements

1. Which business has more assets?
2. Which business owes more to creditors?
3. Which business has more stockholders' equity at the end of the year?
4. Which business brought in more revenue?
5. Which business is more profitable?
6. Which of the foregoing questions do you think is most important for evaluating these two businesses? Why?
7. Which business looks better from a financial standpoint?

> Ethical Issue 1-1

The tobacco companies have paid billions because of smoking-related illnesses. In particular, Philip Morris, a leading cigarette manufacturer, paid more than $3,000,000,000 in settlement payments in one year.

Requirements

1. Suppose you are the chief financial officer (CFO) responsible for the financial statements of Philip Morris. What ethical issue would you face as you consider what to report in your company's annual report about the cash payments? What is the ethical course of action for you to take in this situation?
2. What are some of the negative consequences to Philip Morris for not telling the truth? What are some of the negative consequences to Philip Morris for telling the truth?

> Fraud Case 1-1

Exeter is a building contractor on the Gulf Coast. After losing a number of big lawsuits, it was facing its first annual net loss as the end of the year approached. The owner, Hank Snow, was under intense pressure from the company's creditors to report positive net income for the year. However, he knew that the controller, Alice Li, had arranged a short-term bank loan of $10,000 to cover a temporary shortfall of cash. He told Alice to record the incoming cash as "construction revenue" instead of a loan. That would nudge the company's income into positive territory for the year, and then, he said, the entry could be corrected in January when the loan was repaid.

Requirements

1. How would this action affect the year-end income statement? How would it affect the year-end balance sheet?
2. If you were one of the company's creditors, how would this fraudulent action affect you?

> Financial Statement Case 1-1

This and similar cases in later chapters focus on the financial statements of a real company—**Starbucks Corporation**, a premier roaster and retailer of specialty coffee. As you work each case, you will gain confidence in your ability to use the financial statements of real companies.

Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to the Starbucks Corporation Fiscal 2013 Annual Report.

Requirements

1. How much in cash (including cash equivalents) did Starbucks Corporation have on September 29, 2013?
2. What were the company's total assets at September 29, 2013? At September 30, 2012?
3. Write the company's accounting equation at September 29, 2013, by filling in the dollar amounts:

   Assets = Liabilities + Equity

4. Identify total net sales (revenues) for the year ended September 29, 2013. How much did total revenue increase or decrease from 2012 to 2013?
5. How much net income (net earnings) or net loss did Starbucks earn for 2013 and for 2012? Based on net income, was 2013 better or worse than 2012?
6. Calculate Starbucks Corporation's return on assets for the year ending September 29, 2013.
7. How did Starbucks Corporation's return on assets compare to **Green Mountain Coffee Roasters, Inc.'s** return on assets?

> Quick Check Answers

1. d **2.** c **3.** a **4.** c **5.** c **6.** a **7.** c **8.** a **9.** b **10.** a **11.** c

Recording Business Transactions

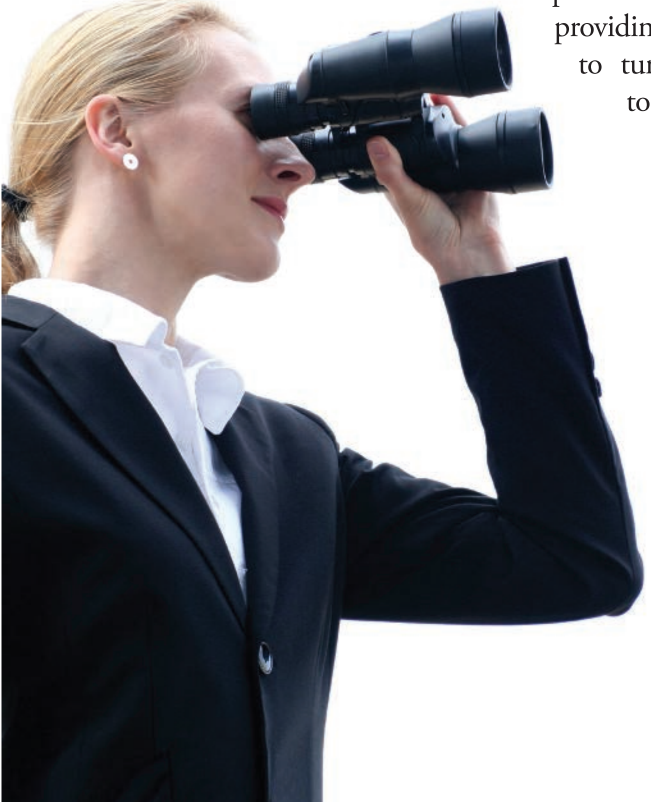
2

Where's the Money?

Rachel Long scoured through the stacks of printouts. She had been hired to work on an embezzlement (stealing cash or assets of an entity) case for a local school district. The chief financial officer had called her because he suspected one of his employees was stealing money from the Parent Teacher Association (PTA). Rachel loved working on embezzlement cases. She enjoyed searching through the financial statements, identifying a problem, and then finding the transactions that documented the embezzlement. Rachel knew that if she looked deeply enough she would find the evidence that money was stolen. She always treated these cases as a puzzle that needed to be solved.

Sometimes businesses are unfortunate enough to have employees steal from them, and they need help in identifying the thief and providing enough evidence to turn the matter over to a law enforcement agency. Businesses often turn to an accountant, such as Rachel, who specializes in fraud, often called a certified fraud examiner. In addition, businesses hire accountants to help protect their assets by identifying potential problems in their recordkeeping and control of cash and assets.

Where will Rachel start looking when she begins searching for the stolen money? She'll start at the source, by reviewing documents such as invoices, sales receipts, and bank deposit slips. She will then review the transactions that were recorded (or not recorded) from those documents. These two pieces will help Rachel determine whether money was stolen from the school district and how the embezzlement occurred. It's important to Rachel that she not only catches the thief but also helps the school district prevent losses in the future. She will use her knowledge and experience in accounting to help her.



Why Is Recording Business Transactions Important?

Accounting is based on transactions. The recording of those transactions is based on source documents that provide the proof of the financial position of the business. The lack of that proof can lead to discoveries of stolen money and fictitious financial statements. As an example, when an employee at WorldCom, Inc., a long distance telephone company, found a $500 million accounting entry without any evidence to support it, it led to the discovery of a $3.8 billion fraud. The recording of transactions from source documents is the first step in the accounting process—and one of the most important. In this chapter, you learn about source documents and how to record transactions.

Chapter 2 Learning Objectives

1. Explain accounts as they relate to the accounting equation and describe common accounts
2. Define debits, credits, and normal account balances using double-entry accounting and T-accounts
3. Record transactions in a journal and post journal entries to the ledger
4. Prepare the trial balance and illustrate how to use the trial balance to prepare financial statements
5. Use the debt ratio to evaluate business performance

Smart Touch Learning started out by recording the company's business transactions in terms of the accounting equation. That procedure works well when learning how to analyze transactions, but it's not a method in which a real-world business actually records transactions. In this chapter, you learn a more efficient way to capture business transactions. First, we need to start with a review of the accounting equation.

WHAT IS AN ACCOUNT?

Learning Objective 1
Explain accounts as they relate to the accounting equation and describe common accounts

Recall that the basic tool of accounting is the accounting equation:

Assets = Liabilities + Equity

Account
A detailed record of all increases and decreases that have occurred in an individual asset, liability, or equity during a specific period.

The accounting equation is made up of three parts or categories: assets, liabilities, and equity. Each category contains accounts. An **account** is the detailed record of all increases and decreases that have occurred in an individual asset, liability, or equity during a specified period.

Assets

Assets are economic resources that are expected to benefit the business in the future—something the business owns or has control of that has value. Exhibit 2-1 contains a list of asset accounts that most businesses use.

I get confused by the difference between Accounts Receivable and Accounts Payable. Is there an easy way to remember these two accounts?

Liabilities

Recall that a *liability* is a debt—that is, something the business owes. A business generally has fewer liability accounts than asset accounts. Exhibit 2-2 contains examples of common liability accounts.

You might be confused by the difference between the asset account, Accounts Receivable, and the liability account, Accounts Payable. An easy way to remember the distinction between these two accounts involves the words *Receivable* and *Payable*. A *receivable* involves a future *receipt* of cash. A *payable* involves a future *payment* of cash.

Exhibit 2-1 Asset Accounts

Account Name	Explanation
Cash	A business's money. Includes bank balances, bills, coins, and checks.
Accounts Receivable	A customer's promise to pay in the future for services or goods sold. Often described as "On Account."
Notes Receivable	A *written* promise that a customer will pay a fixed amount of money and *interest* by a certain date in the future. Usually more formal than an Accounts Receivable.
Prepaid Expense	A payment of an expense in advance. It is considered an asset because the prepayment provides a benefit in the future. Examples of prepaid expenses are *Prepaid Rent*, *Prepaid Insurance*, and *Office Supplies*.
Equipment, Furniture, and Fixtures	The cost of equipment, furniture, and fixtures (such as light fixtures and shelving). A business has a separate asset account for each type.
Building	The cost of an office building, a store, or a warehouse.
Land	The cost of land a business uses in operations.

Notes Receivable
A written promise that a customer will pay a fixed amount of principal plus interest by a certain date in the future.

Prepaid Expense
A payment of an expense in advance.

Exhibit 2-2 Liability Accounts

Account Name	Explanation
Accounts Payable	A promise made by the business to pay a debt in the future. Arises from a credit purchase.
Notes Payable	A *written* promise made by the business to pay a debt, usually involving *interest,* in the future.
Accrued Liability	An amount owed but not paid. A specific type of payable such as *Taxes Payable*, *Rent Payable*, and *Salaries Payable*.
Unearned Revenue	Occurs when a company receives cash from a customer but has not provided the product or service. The promise to provide services or deliver goods in the future.

Notes Payable
A written promise made by the business to pay a debt, usually involving interest, in the future.

Accrued Liability
A liability for which the business knows the amount owed but the bill has not been paid.

Unearned Revenue
A liability created when a business collects cash from customers in advance of providing services or delivering goods.

Equity

The stockholders' claim to the assets of the business is called equity or stockholders' equity. As shown in Exhibit 2-3, a company has separate accounts for each element of equity.

Exhibit 2-3 | **Equity Accounts**

Account Name	Explanation
Common Stock	Represents the net contributions of the stockholders in the business. Increases equity.
Dividends	Distributions of cash or other assets to the stockholders. Decreases equity.
Revenues	Earnings that result from delivering goods or services to customers. Increases equity. Examples include *Service Revenue* and *Rent Revenue*.
Expenses	The cost of selling goods or services. Decreases equity. Examples include *Rent Expense*, *Salaries Expense*, and *Utilities Expense*.

Chart of Accounts

Chart of Accounts
A list of all of a company's accounts with their account numbers.

Companies need a way to organize their accounts. They use a **chart of accounts** to do this. A chart of accounts lists all company accounts along with the account numbers. The chart of accounts for Smart Touch Learning appears in Exhibit 2-4. Account numbers are just shorthand versions of the account names. One account number equals one account name—just like your Social Security number is unique to you.

It can be confusing to choose the correct account to use when there are multiple accounts that sound similar. As an example, let's think about rent. There are four types of rent accounts: Prepaid Rent (asset), Rent Payable (liability), Rent Revenue (equity), or Rent Expense (equity). It is important that we understand the definition of each type of account so that we can use the account correctly. Prepaid Rent represents a prepayment of cash for renting a building in the future. Rent Payable represents a debt owed for renting a building currently, and Rent Expense represents the cost of renting a building currently. Rent Revenue, on the other hand, relates to the earning of revenue related to renting the building to a tenant currently.

Account numbers usually have two or more digits. Assets are often numbered beginning with 1, liabilities with 2, stockholders' equity with 3, revenues with 4, and expenses with 5. The second and third digits in an account number indicate where the account fits within the category. For example, if Smart Touch Learning is using three-digit account numbers, Cash may be account number 101, the first asset account. Accounts Receivable may be account number 111, the second asset. Accounts Payable may be account number 201, the first liability. When numbers are used, all accounts are numbered by this system. However, each company chooses its own account numbering system.

Notice in Exhibit 2-4 the gap in account numbers between 121 and 141. Smart Touch Learning may need to add another asset account in the future. For example, the business may start selling some type of inventory and want to use account number 131 for Merchandise Inventory. So, the chart of accounts will change as the business evolves.

Exhibit 2-4 Chart of Accounts—Smart Touch Learning

Balance Sheet Accounts

Assets	Liabilities	Equity
101 Cash	201 Accounts Payable	301 Common Stock
111 Accounts Receivable	211 Salaries Payable	311 Retained Earnings
121 Notes Receivable	221 Interest Payable	321 Dividends
141 Office Supplies	231 Unearned Revenue	
151 Furniture	241 Notes Payable	
171 Building		
191 Land		

Income Statement Accounts (Part of Equity)

Revenues	Expenses
401 Service Revenue	501 Rent Expense
411 Interest Revenue	511 Salaries Expense
	521 Utilities Expense
	531 Advertising Expense

The chart of accounts varies from business to business, though many account names are common to all companies. For example, you will find Cash on every company's chart of accounts. The chart of accounts contains the list of account names you will use to record a transaction.

IFRS

Worldwide, accounting systems are based on the same equation: Assets = Liabilities + Equity. Or, in Spanish: Activos = Pasivos + Patrimonio Neto. And accounts are the building blocks for all accounting systems.

Ledger

In addition to a chart of accounts, companies need a way to show all of the increases and decreases in each account along with their balances. Companies use a **ledger** to fulfill this task. A ledger is a collection of all the accounts, the changes in those accounts, and their balances.

Ledger
The record holding all the accounts of a business, the changes in those accounts, and their balances.

A chart of accounts and a ledger are similar in that they both list the account names and account numbers of the business. A ledger, though, provides more detail. It includes the increases and decreases of each account for a specific period and the balance of each account at a specific point in time.

What are the similarities and differences between a chart of accounts and a ledger?

Try It!

Consider the following accounts and identify each as an asset (A), liability (L), or equity (E).

1. Rent Expense
2. Common Stock
3. Furniture
4. Service Revenue
5. Prepaid Insurance
6. Accounts Payable
7. Unearned Revenue
8. Notes Receivable
9. Dividends
10. Insurance Expense

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S2-1. MyAccountingLab

WHAT IS DOUBLE-ENTRY ACCOUNTING?

Learning Objective 2
Define debits, credits, and normal account balances using double-entry accounting and T-accounts

Double-Entry System
A system of accounting in which every transaction affects at least two accounts.

Previously you learned that every transaction must be recorded into at least two accounts. For example, when a stockholder contributes money in exchange for Common Stock, the two accounts involved are Cash and Common Stock. Accounting uses this **double-entry system** to record the dual effects of each transaction. A transaction would be incomplete if only one side were recorded.

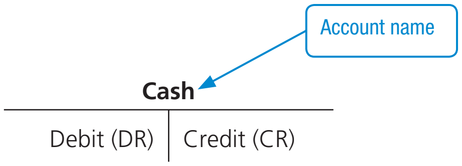
Consider a cash purchase of office supplies. What are the dual effects? A cash purchase of office supplies:

1. Increases the account Office Supplies (the business received office supplies).
2. Decreases Cash (the business paid cash).

The T-Account

T-Account
A summary device that is shaped like a capital *T* with debits posted on the left side of the vertical line and credits on the right side of the vertical line.

A shortened form of the ledger is called the **T-account** because it takes the form of the capital letter *T*. The vertical line divides the account into its left and right sides, with the account name at the top. For example, the Cash T-account appears as follows:



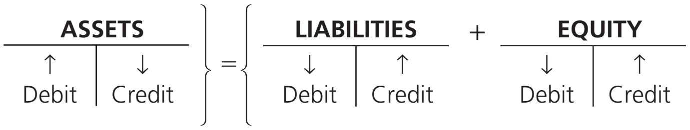
Debit
The left side of a T-account.

Credit
The right side of a T-account.

The left side of the T-account is called the **debit** side, and the right side is called the **credit** side. To become comfortable using these terms, remember the following: Debits go on the left; credits go on the right. Debit is abbreviated as DR, and Credit is abbreviated as CR.

Increases and Decreases in the Accounts

How we record increases and decreases to an account is determined by the account type (asset, liability, or equity). For any given account, increases are recorded on one side and decreases are recorded on the opposite side. The following T-accounts provide a summary:



In other words, assets are always increased with a *debit* and decreased with a *credit*. Liabilities and equity are always increased with a *credit* and decreased with a *debit*. Whether an account is increased or decreased by a debit or a credit depends on the type of account. Debits are not "good" or "bad." Neither are credits. Debits are not always increases or always decreases—neither are credits. **The only thing a designation as a debit or credit means is where the item is placed—on the left or right side of the T-account.**

I always thought that a debit meant decrease and a credit meant increase. Am I wrong?

In a computerized accounting information system, the computer interprets debits and credits as increases or decreases, based on the account type. For example, a computer reads a debit to Cash as an increase because it is an asset account. The computer reads a debit to Accounts Payable as a decrease because it is a liability account.

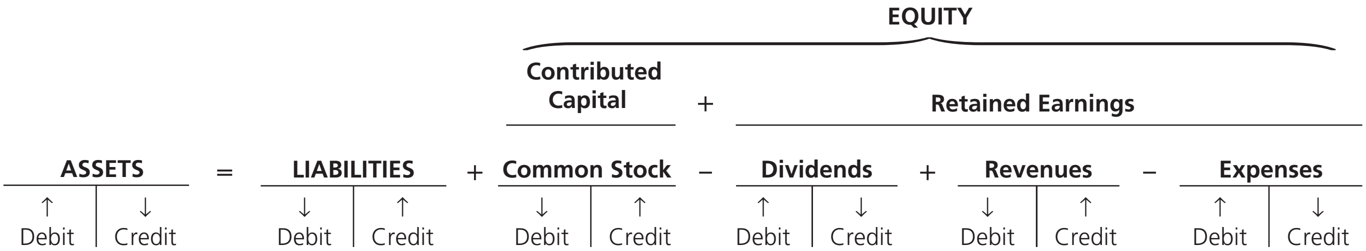
Example: Assume a business wants to record an increase of $30,000 to the Cash account. The business would record a debit to Cash as follows:

Cash is an asset account and, remember, asset accounts are increased with debits.

Example: What if the business, instead, wanted to record a decrease of $20,000 to the Cash account? The business would record a credit to Cash because Cash is an asset account and asset accounts are decreased with credits:

Expanding the Rules of Debit and Credit

As we have noted, equity contains four account types: Common Stock, Dividends, Revenues, and Expenses. Common Stock and Revenues increase equity, whereas Dividends and Expenses decrease equity. We must now expand the accounting equation and the rules of debits and credits to include all elements of equity:

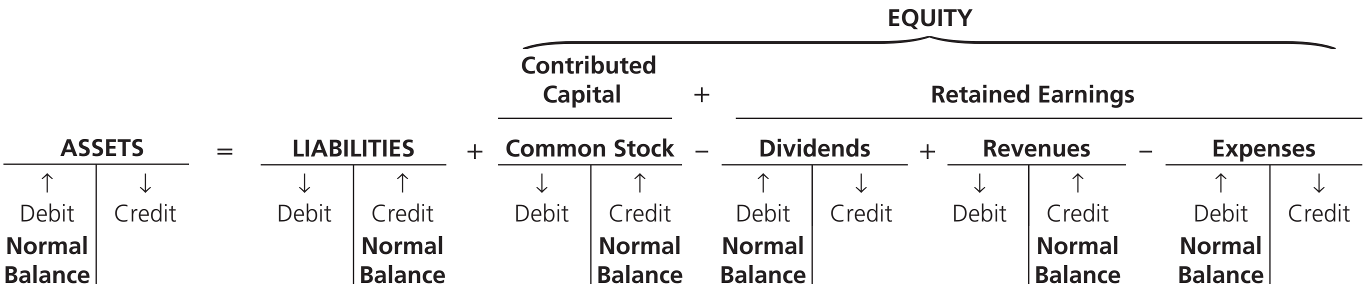


Notice in the expanded accounting equation that Dividends and Expenses record increases and decreases opposite of Common Stock and Revenues. This is because increases in Dividends and Expenses decrease equity.

The Normal Balance of an Account

All accounts have a normal balance. An account's **normal balance** appears on the side—either debit or credit—where we record an *increase* (↑) in the account's balance. For example, assets are increased with a debit, so the normal balance is a debit. Liabilities and equity are increased with a credit, so the normal balance is a credit. Expenses and Dividends are equity accounts that have normal debit balances—unlike the other equity accounts. They have debit balances because they decrease equity. Common Stock and Revenues have a normal balance of credit. Let's look again at the accounting equation, this time with the normal balances marked:

Normal Balance
The balance that appears on the increase side of an account.



An account with a normal debit balance may occasionally have a credit balance. That indicates a negative amount in the account. For example, Cash will have a credit balance if the business overdraws its bank account. Also, the liability, Accounts Payable—a normal credit balance account—could have a debit balance if the company overpays its accounts payable. In other cases, a non-normal account balance indicates an error. For example, a credit balance in Office Supplies, Furniture, or Buildings is an error because negative amounts of these assets make no sense.

Exhibit 2-5 summarizes the rules of debit and credit and the normal balances for each account type.

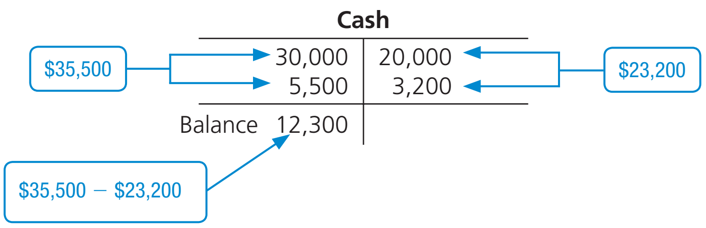
Exhibit 2-5 | **Rules of Debit and Credit and Normal Balances for Each Account Type**

Account Type	Increases	Decreases	Normal Balance
Assets	Debit	Credit	Debit
Expenses	Debit	Credit	Debit
Dividends	Debit	Credit	Debit
Liabilities	Credit	Debit	Credit
Revenues	Credit	Debit	Credit
Common Stock	Credit	Debit	Credit

An easy way to remember the rules of debits and credits is to memorize this helpful sentence. All elephants do love rowdy children. The first three words in the sentence will help you remember that assets, expenses, and dividends all have normal debit balances. The last three words in the sentence will remind you that liabilities, revenues, and common stock all have normal credit balances.

Determining the Balance of a T-Account

T-accounts can be used to determine the amount remaining in an account or the *balance* of the account. To illustrate, let's look at the following Cash T-Account:



The balance of this Cash account is $12,300. This is calculated by adding each side of the account separately ($35,500 and $23,200) and then subtracting the smaller number from the larger number ($35,500 – $23,200). The balance ($12,300) is always reported on the side with the larger number.

Try It!

For each account, identify if the change would be recorded as a debit (DR) or credit (CR).

11. Increase to Cash

12. Decrease to Accounts Payable

13. Increase to Common Stock

14. Increase to Unearned Revenue

15. Decrease to Accounts Receivable

16. Increase to Interest Revenue

17. Increase to Rent Expense

18. Decrease to Office Supplies

19. Increase to Prepaid Rent

20. Increase to Notes Payable

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S2-2 and S2-3. MyAccountingLab

HOW DO YOU RECORD TRANSACTIONS?

When we reviewed the activity for Smart Touch Learning, we provided you with the transactions. In a real-world business, because of the faithful representation concept, accountants would need to provide evidence for those transactions.

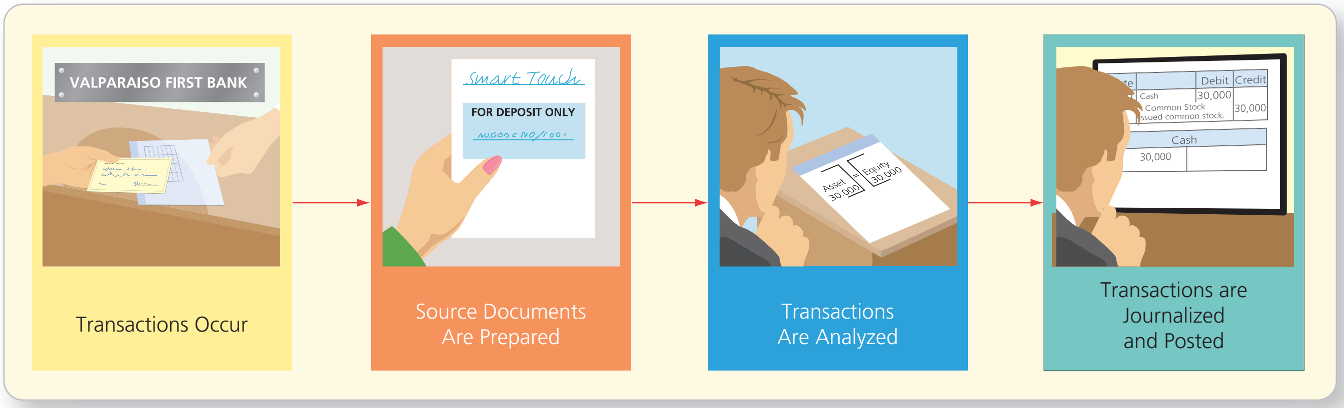
Learning Objective 3
Record transactions in a journal and post journal entries to the ledger

Source Documents—The Origin of the Transactions

Accountant use **source documents** to provide the evidence and data for recording transactions. For example, consider Sheena Bright's contribution of $30,000 to the business. Exhibit 2-6 illustrates the transaction. In that exhibit, Smart Touch Learning received $30,000 and deposited it in the bank. The business then gave common stock to Sheena Bright. The check received and the bank deposit slip are the source documents that show the amount of cash received by the business and the equity contribution of the stockholder, Sheena Bright. Based on these documents, the business can determine how to record this transaction.

Source Document
Provides the evidence and data for accounting transactions.

Exhibit 2-6 | **Flow of Accounting Data**



ETHICS

Are receipts really important?

Elijah Morris, assistant manager for Red's American Burger Restaurant, is responsible for purchasing equipment and supplies for the restaurant. Elijah recently purchased a $4,000 commercial-grade refrigerator for the restaurant, but he can't find the receipt. Elijah purchased the refrigerator with personal funds and is asking to be reimbursed by the restaurant. Hannah, the restaurant's accountant, has said that she is unsure if the business can reimburse Elijah without a receipt. Elijah suggests: "Hannah, it won't really matter if I have a receipt or not. You've seen the refrigerator in the restaurant, so you know I purchased it. What difference is a little receipt going to make?"

What should Hannah do? What would you do?

Solution

Hannah should not reimburse Elijah until she receives the receipt—the source document. Elijah could have purchased the refrigerator for less than the amount he is asking in reimbursement. Source documents provide the evidence of the amount of the transaction. If either an auditor or the owner of the restaurant investigated the $4,000 purchase, he or she would need to see the source document to verify the transaction. If Elijah truly cannot find the receipt, Hannah should ask for an alternative source document such as a credit card or bank statement that shows evidence of the purchase. In addition, Elijah should be warned about using personal funds to purchase equipment for the business.

Other source documents that businesses use include the following:

- **Purchase invoices.** Documents that tell the business how much and when to pay a vendor for purchases on account, such as office supplies.
- **Bank checks.** Documents that illustrate the amount and date of cash payments.
- **Sales invoices.** Documents provided to clients when a business sells services or goods; tells the business how much revenue to record.

Journalizing and Posting Transactions

Journal
A record of transactions in date order.

Posting
Transferring data from the journal to the ledger.

After accountants review the source documents, they are then ready to record the transactions. Transactions are first recorded in a **journal**, which is the record of transactions in date order.

Journalizing a transaction records the data only in the journal—not in the ledger (the record holding all of the accounts of a business). The data must also be transferred to the ledger. The process of transferring data from the journal to the ledger is called **posting**. We post from the journal to the ledger. Debits in the journal are posted as debits in the ledger and credits as credits—no exceptions.

The following diagram shows this process:

Date		Debit	Credit
Nov.1	Cash	30,000	
	Common Stock		30,000
	Issued common stock.		

Transactions are recorded in a journal.

Cash	
30,000	

Common Stock	
	30,000

Data is posted (transferred) to the ledger.

You have learned steps to use when analyzing accounting transactions. Use a modified version of those steps to help when recording transactions in the journal and then posting the journal entries to the ledger. The journalizing and posting process has five steps:

Step 1: Identify the accounts and the account type (asset, liability, or equity).

Step 2: Decide whether each account increases or decreases, then apply the rules of debits and credits.

Step 3: Record the transaction in the journal.

Step 4: Post the journal entry to the ledger.

Step 5: Determine whether the accounting equation is in balance.

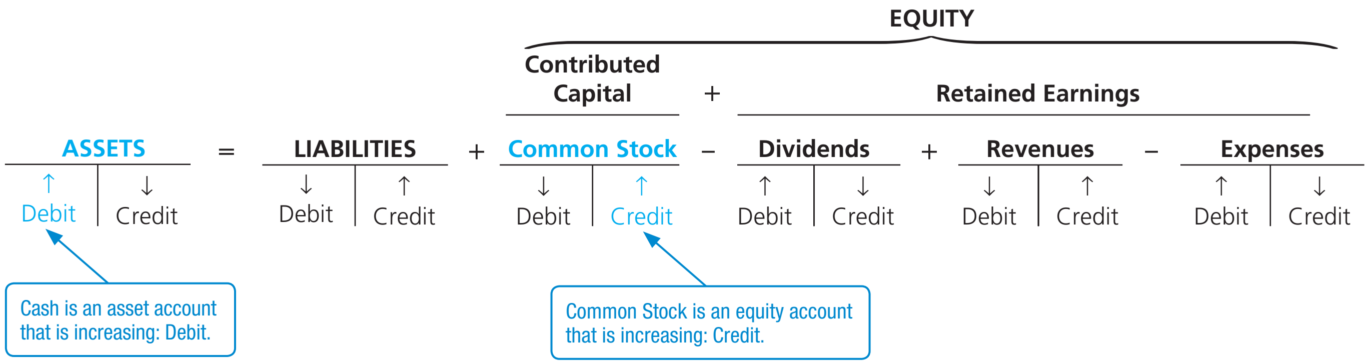
Let's begin by journalizing the first transaction of Smart Touch Learning.

Transaction 1—Stockholder Contribution

On November 1, the e-learning company received $30,000 cash from Sheena Bright and the business issued common stock to her.

Step 1: Identify the accounts and the account type. The two accounts involved are Cash (Asset) and Common Stock (Equity).

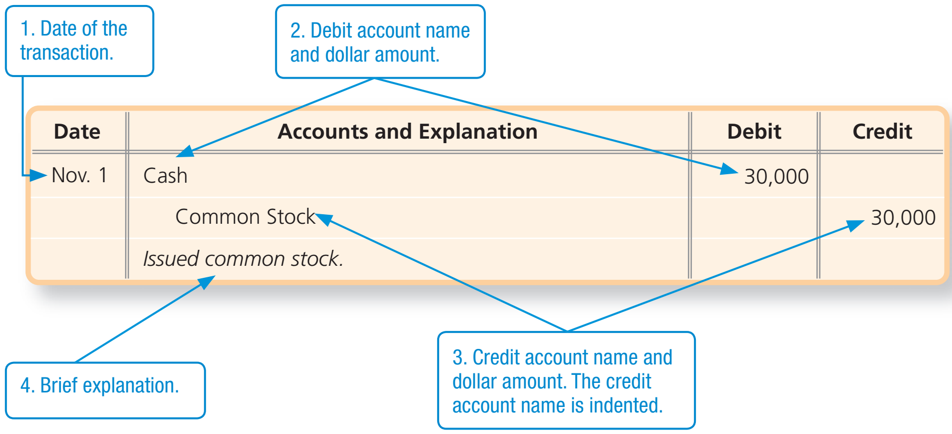
Step 2: Decide whether each account increases or decreases, then apply the rules of debits and credits. Both accounts increase by $30,000. Reviewing the rules of debits and credits, we use the accounting equation to help determine debits and credits for each account. Cash is an asset account and is increasing, so we will record a debit to Cash. Common Stock is an equity account and is increasing, so we will record a credit to Common Stock.



Cash is an asset account that is increasing: Debit.

Common Stock is an equity account that is increasing: Credit.

Step 3: Record the transaction in the journal. The recording of a transaction in the journal creates a journal entry. The journal entry for Transaction 1 is illustrated below. Notice that each journal entry contains four parts.



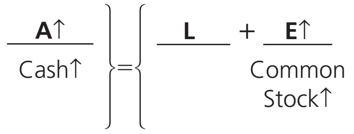
1. Date of the transaction.

2. Debit account name and dollar amount.

Date	Accounts and Explanation	Debit	Credit
Nov. 1	Cash	30,000	
	Common Stock		30,000
	Issued common stock.		

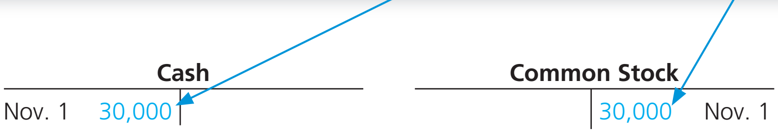
4. Brief explanation.

3. Credit account name and dollar amount. The credit account name is indented.



Step 4: Post the journal entry to the ledger. When transactions are posted from the journal to the ledger, the dollar amount is transferred from the debit and credit columns to the specific account. The date of the journal entry is also transferred to the T-accounts in the ledger. In a computerized system, this step is completed automatically when the transaction is recorded in the journal.

Date	Accounts and Explanation	Debit	Credit
Nov. 1	Cash	30,000	
	Common Stock		30,000
	Issued common stock.		



Step 5: Determine if the accounting equation is in balance.

	ASSETS		LIABILITIES	+	EQUITY
	Cash	=			Common Stock
(1)	+ 30,000				+ 30,000

To help reinforce your learning of the account types, we will illustrate the transaction in the margin. We will indicate the accounts and account type (Step 1) and whether each account is increasing or decreasing (Step 2). These notations would not normally show up in a journal, but we have included them here to reinforce the rules of debits and credits.

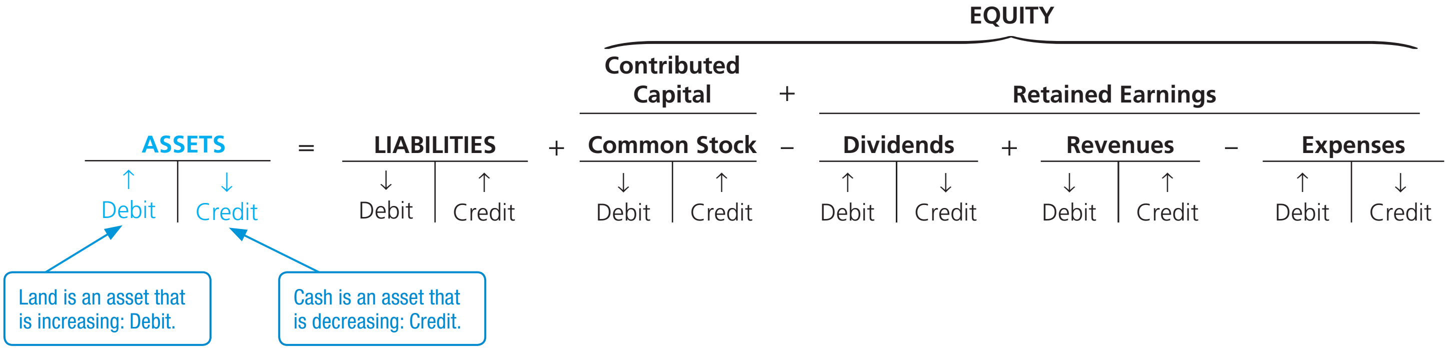
Let's look at Transaction 2 for Smart Touch Learning and apply the steps we just learned.

Transaction 2—Purchase of Land for Cash

On November 2, Smart Touch Learning paid $20,000 cash for land.

Step 1: Identify the accounts and the account type. The two accounts involved are Cash (Asset) and Land (Asset).

Step 2: Decide whether each account increases or decreases, then apply the rules of debits and credits. Cash decreases. The business paid cash. Therefore, we credit Cash. The land increased, so we debit the Land account.



Step 3: Record the transaction in the journal.

Date	Accounts and Explanation	Debit	Credit
Nov. 2	Land	20,000	
	Cash		20,000
	Paid cash for land.		

A↑↓		L	+	E
Land↑ Cash↓	=			

Step 4: Post the journal entry to the ledger.

Cash

Nov. 1	30,000	20,000	Nov. 2

Land

Nov. 2	20,000		

Step 5: Determine whether the accounting equation is in balance.

	ASSETS				LIABILITIES	+	EQUITY
	Cash	+	Land			+	Common Stock
Bal.	$30,000			=			$30,000
(2)	−20,000		+20,000				
Bal.	$10,000	+	$20,000				$30,000

We will now record journal entries for several more transactions for Smart Touch Learning. Now that you understand the steps, try to write the steps yourself before looking at the journal entry. Remember, if you need help, we'll provide the effect on the accounting equation in the margin.

Transaction 3—Purchase of Office Supplies on Account

Smart Touch Learning buys $500 of office supplies on account on November 3.

The supplies will benefit Smart Touch Learning in future periods, so they are an asset to the company until they are used. The asset Office Supplies increased, so we debit Office Supplies. The liability Accounts Payable increased, so we credit Accounts Payable.

Date	Accounts and Explanation	Debit	Credit
Nov. 3	Office Supplies	500	
	Accounts Payable		500
	Purchased office supplies on account.		

A↑		L↑	+	E
Office Supplies↑	=	Accounts Payable↑		

Office Supplies

Nov. 3	500		

Accounts Payable

		500	Nov. 3

Transaction 4—Earning of Service Revenue for Cash

On November 8, Smart Touch Learning collected cash of $5,500 for service revenue that the business earned by providing e-learning services for clients.

The asset Cash increased, so we debit Cash. Revenue increased, so we credit Service Revenue.

A↑		**L**	+	**E↑**
Cash↑	=			Service Revenue↑

Date	Accounts and Explanation	Debit	Credit
Nov. 8	Cash	5,500	
	Service Revenue		5,500
	Performed services and received cash.		

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500		

Service Revenue

		5,500	Nov. 8

Transaction 5—Earning of Service Revenue on Account

On November 10, Smart Touch Learning performed services for clients, for which the clients will pay the company later. The business earned $3,000 of service revenue on account.

This transaction increased Accounts Receivable, so we debit this asset. Service Revenue is increased with a credit.

A↑		**L**	+	**E↑**
Accounts Receivable↑	=			Service Revenue↑

Date	Accounts and Explanation	Debit	Credit
Nov. 10	Accounts Receivable	3,000	
	Service Revenue		3,000
	Performed services on account.		

Accounts Receivable

Nov. 10	3,000		

Service Revenue

		5,500	Nov. 8
		3,000	Nov. 10

Notice the differences and the similarities between Transactions 4 and 5. In both transactions, Service Revenue was increased (credited) because in both cases the company had earned revenue. However, in Transaction 4, the company was paid at the time of service. In Transaction 5, on the other hand, the company will receive cash later (Accounts Receivable). This difference is key because the amount of revenue is not determined by when the company *receives* cash. Revenues are recorded when the company *does* the work or provides the service.

Transaction 6—Payment of Expenses with Cash

Smart Touch Learning paid the following cash expenses on November 15: office rent, $2,000, and employee salaries, $1,200. We need to debit each expense account to record its increase and credit Cash, an asset, for the total decrease.

Date	Accounts and Explanation	Debit	Credit
Nov. 15	Rent Expense	2,000	
	Salaries Expense	1,200	
	Cash		3,200
	Paid cash expenses.		

A↓	=	L	+	E↓
Cash↓				Rent Expense↑ Salaries Expense↑

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15

Rent Expense

Nov. 15	2,000	

Salaries Expense

Nov. 15	1,200	

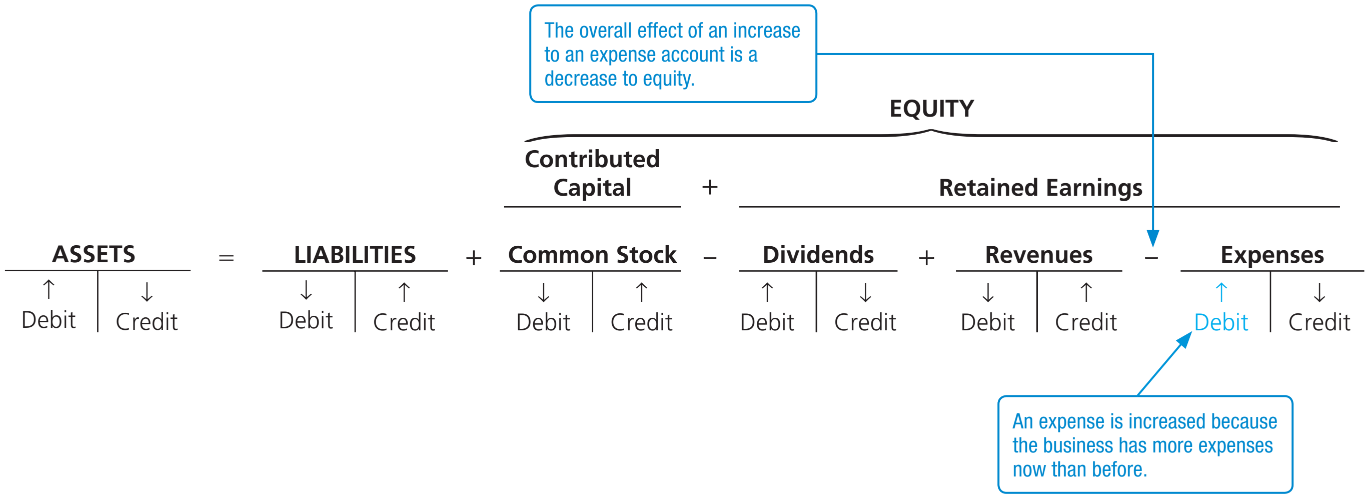
Compound Journal Entry
A journal entry that is characterized by having multiple debits and/or multiple credits.

Notice that the journal entry has three accounts involved—two debits and one credit. This is a compound journal entry. A **compound journal entry** has more than two accounts, but total dollar value of the debits still must equal total dollar value of the credits.

Before we move to the next transaction, let's take a moment to carefully look at expenses. In Transaction 6, we recorded a debit to each expense account. The accounting equation and the rules of debits and credits state that a debit to an expense account increases the account.

We are recording an increase to the expense account because the business has more expenses now than it had before. But, remember, the overall effect on the accounting equation is that increases in expenses decrease equity. An easy way to think about it is that we are increasing a negative account.

I thought expenses decreased equity, but we are debiting the expense that records an increase to the account.



The overall effect of an increase to an expense account is a decrease to equity.

An expense is increased because the business has more expenses now than before.

Transaction 7—Payment on Account (Accounts Payable)

On November 21, Smart Touch Learning paid $300 on the accounts payable created in Transaction 3. The payment decreased cash, an asset, so we credit Cash. The payment decreased Accounts Payable, so we debit that liability.

A↓		L↓	+	E
Cash↓	=	Accounts Payable↓		

Date	Accounts and Explanation	Debit	Credit
Nov. 21	Accounts Payable	300	
	Cash		300
	Paid cash on account.		

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
		300	Nov. 21

Accounts Payable

Nov. 21	300	500	Nov. 3

Notice that after recording this transaction and posting to the Accounts Payable account, the balance of Accounts Payable is $200 ($500 – $300). This is the new balance that the business owes to its creditor.

Transaction 8—Collection on Account (Accounts Receivable)

On November 22, Smart Touch Learning collected $2,000 cash from a client in Transaction 5. Cash is increased, so we debit the asset Cash. Accounts Receivable, also an asset, is decreased, so we credit Accounts Receivable. *Note:* This transaction has no effect on revenue; the related revenue was recorded in Transaction 5.

A↓↑		L	+	E
Cash↑ Accounts Receivable↓	=			

Date	Accounts and Explanation	Debit	Credit
Nov. 22	Cash	2,000	
	Accounts Receivable		2,000
	Received cash on account.		

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21

Accounts Receivable

Nov. 10	3,000	2,000	Nov. 22

Transaction 9—Payment of Cash Dividend

On November 25, a payment of $5,000 cash was paid for dividends. The dividend decreased the entity's cash, so we credit Cash. The dividend also decreased equity. Decreases in equity that result from dividends are debited to the Dividends account.

Date	Accounts and Explanation	Debit	Credit
Nov. 25	Dividends	5,000	
	Cash		5,000
	Paid dividends.		

A↓		L	+	E↓
Cash↓	=			Dividends↑

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
		5,000	Nov. 25

Dividends

Nov. 25	5,000	

Transaction 10—Prepaid Expenses

On December 1, Smart Touch Learning prepays three months' office rent of $3,000 ($1,000 per month × 3 months). The prepayment of the rent is recorded to the Prepaid Rent account (Asset). It is recorded as an asset because Smart Touch Learning will receive a benefit in the future. The asset, Prepaid Rent, is increasing, so we will need to debit it. Cash is decreasing and will be recorded as a credit.

Date	Accounts and Explanation	Debit	Credit
Dec. 1	Prepaid Rent	3,000	
	Cash		3,000
	Paid rent in advance.		

A↓↑		L	+	E
Prepaid Rent↑ Cash↓	=			

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
		5,000	Nov. 25
		3,000	Dec. 1

Prepaid Rent

Dec. 1	3,000	

Transaction 11—Payment of Expense with Cash

On December 1, Smart Touch Learning paid employee salaries of $1,200. Salaries Expense will be debited to record its increase, and Cash will be credited for the decrease.

A↓		L	+	E↓
Cash↓	=			Salaries Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 1	Salaries Expense	1,200	
	Cash		1,200
	Paid salaries.		

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
		5,000	Nov. 25
		3,000	Dec. 1
		1,200	Dec. 1

Salaries Expense

Nov. 15	1,200		
Dec. 1	1,200		

Transaction 12—Purchase of Building with Notes Payable

On December 1, Smart Touch Learning purchased a $60,000 building in exchange for a note payable. The building will benefit the business in the future, so it is recorded as an asset to the company. The asset Building is increased, so we debit Building. The liability Notes Payable increased, so we credit Notes Payable.

A↑		L↑	+	E
Building↑	=	Notes Payable↑		

Date	Accounts and Explanation	Debit	Credit
Dec. 1	Building	60,000	
	Notes Payable		60,000
	Purchase of building with note.		

Building

Dec. 1	60,000		

Notes Payable

		60,000	Dec. 1

Transaction 13—Stockholder Contribution

On December 2, Smart Touch Learning received a contribution of furniture with a fair market value of $18,000 from Sheena Bright. In exchange, Smart Touch Learning issued common stock. The furniture will benefit the company in the future, so it is recorded as an asset. The asset Furniture is increasing, so we debit it. Common Stock, an equity account, is also increasing and is recorded as a credit.

Date	Accounts and Explanation	Debit	Credit
Dec. 2	Furniture	18,000	
	Common Stock		18,000
	Contribution of furniture in exchange for common stock.		

A↑		**L**	+	**E↑**
Furniture↑	=			Common Stock↑

Furniture			
Dec. 2	18,000		

Common Stock			
		30,000	Nov. 1
		18,000	Dec. 2

Transaction 14—Accrued Liability

On December 15, Smart Touch Learning received a telephone bill for $100 and will pay this expense next month. There is no cash payment now. This is an accrued liability. Remember, an accrued liability is a liability for which the business knows the amount owed, but the bill has not been paid. The Utilities Expense increased, so we debit this expense. The liability (Utilities Payable) increased, so we credit Utilities Payable. Alternatively, we could credit Accounts Payable instead of Utilities Payable.

Date	Accounts and Explanation	Debit	Credit
Dec. 15	Utilities Expense	100	
	Utilities Payable		100
	Accrued utility liability.		

A		**L↑**	+	**E↓**
	=	Utilities Payable↑		Utilities Expense↑

Utilities Payable			
		100	Dec. 15

Utilities Expense			
Dec. 15	100		

Transaction 15—Payment of Expense with Cash

On December 15, Smart Touch Learning paid employee salaries of $1,200. Salaries Expense will be debited to record its increase, and Cash will be credited for the decrease.

A↓		L	+	E↓
Cash↓	=			Salaries Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 15	Salaries Expense	1,200	
	Cash		1,200
	Paid salaries.		

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
		5,000	Nov. 25
		3,000	Dec. 1
		1,200	Dec. 1
		1,200	Dec. 15

Salaries Expense

Nov. 15	1,200		
Dec. 1	1,200		
Dec. 15	1,200		

Transaction 16—Unearned Revenue

On December 21, a law firm engages Smart Touch Learning to provide e-learning services and agrees to pay $600 in advance. Smart Touch Learning received cash but has not yet performed the services. Cash increased, so we debit Cash. The promise to perform services in the future will be recorded as Unearned Revenue, a liability account. Unearned Revenue is increasing, so we credit it. Notice that we did not record revenue. Revenue is not recorded until Smart Touch Learning provides the services.

A↑		L↑	+	E
Cash↑	=	Unearned Revenue↑		

Date	Accounts and Explanation	Debit	Credit
Dec. 21	Cash	600	
	Unearned Revenue		600
	Collected cash for future services.		

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
Dec. 21	600	5,000	Nov. 25
		3,000	Dec. 1
		1,200	Dec. 1
		1,200	Dec. 15

Unearned Revenue

		600	Dec. 21

Transaction 17—Earning of Service Revenue for Cash

On December 28, Smart Touch Learning collected cash of $8,000 for Service Revenue that the business earned by providing e-learning services for clients.

Date	Accounts and Explanation	Debit	Credit
Dec. 28	Cash	8,000	
	Service Revenue		8,000
	Performed services and received cash.		

A↑		L	+	E↑
Cash↑	=			Service Revenue↑

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
Dec. 21	600	5,000	Nov. 25
Dec. 28	8,000	3,000	Dec. 1
		1,200	Dec. 1
		1,200	Dec. 15

Service Revenue

		5,500	Nov. 8
		3,000	Nov. 10
		8,000	Dec. 28

The Ledger Accounts After Posting

Exhibit 2-7 (on the next page) shows the T-accounts of Smart Touch Learning after posting the journal entries from the journal to the ledger. The accounts are grouped under their headings. Notice that at December 31, Smart Touch Learning has assets of $114,700 ($12,200 + $1,000 + $500 + $3,000 + $18,000 + $60,000 + $20,000), liabilities of $60,900 ($200 + $100 + $600 + $60,000), and equity of $53,800 ($48,000 − $5,000 + $16,500 − $2,000 − $3,600 − $100). The accounting equation is in balance ($114,700 = $60,900 + $53,800).

Exhibit 2-7 Smart Touch Learning's Accounts After Posting Journal Entries in November and December

ASSETS = **LIABILITIES** + **EQUITY**

Contributed Capital + **Retained Earnings**

Cash = **Accounts Payable** + **Common Stock** − **Dividends** + **Service Revenue** − **Rent Expense**

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
Dec. 21	600	5,000	Nov. 25
Dec. 28	8,000	3,000	Dec. 1
		1,200	Dec. 1
		1,200	Dec. 15
Bal.	12,200		

Accounts Receivable

Nov. 10	3,000	2,000	Nov. 22
Bal.	1,000		

Office Supplies

Nov. 3	500		
Bal.	500		

Prepaid Rent

Dec. 1	3,000		
Bal.	3,000		

Furniture

Dec. 2	18,000		
Bal.	18,000		

Building

Dec. 1	60,000		
Bal.	60,000		

Land

Nov. 2	20,000		
Bal.	20,000		

Accounts Payable

Nov. 21	300	500	Nov. 3
		200	Bal.

Utilities Payable

		100	Dec. 15
		100	Bal.

Unearned Revenue

		600	Dec. 21
		600	Bal.

Notes Payable

		60,000	Dec. 1
		60,000	Bal.

Common Stock

		30,000	Nov. 1
		18,000	Dec. 2
		48,000	Bal.

Dividends

Nov. 25	5,000		
Bal.	5,000		

Service Revenue

		5,500	Nov. 8
		3,000	Nov. 10
		8,000	Dec. 28
		16,500	Bal.

Rent Expense

Nov. 15	2,000		
Bal.	2,000		

Salaries Expense

Nov. 15	1,200		
Dec. 1	1,200		
Dec. 15	1,200		
Bal.	3,600		

Utilities Expense

Dec. 15	100		
Bal.	100		

$114,700 = **$60,900** + **$53,800**

The Four-Column Account: An Alternative to the T-Account

The ledger accounts illustrated thus far appear as T-accounts, with the debits on the left and the credits on the right. The T-account clearly separates debits from credits and is used for teaching. An alternative to using the T-account is the four-column account. The four-column account still has debit and credit columns, but it also adds two additional columns that are used to determine a running balance. Exhibit 2-8 shows the Cash T-account and the Cash four-column account for Smart Touch Learning.

The first pair of Debit/Credit columns in the four-column account is for transaction amounts posted to the account from the journal, such as the $30,000 debit. The second pair of Debit/Credit columns shows the balance of the account as of each date. Because the four-column format provides more information, it is used more often in practice than the T-account. Notice that the balance after the last transaction on December 28 is $12,200, which is the same balance calculated in the T-account.

Do you notice the column labeled *Post Ref.* in the four-column account in Exhibit 2-8? This column is used in the posting process. When the information is transferred from the journal to the ledger, a posting reference (Post Ref.) is added. This allows a user of the financial data to trace the amount in the ledger back to the journal. In a computerized system, the user would be able to click on the posting reference to view the

Exhibit 2-8 | **T-Account Versus Four-Column Account**

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
Dec. 21	600	5,000	Nov. 25
Dec. 28	8,000	3,000	Dec. 1
		1,200	Dec. 1
		1,200	Dec. 15
Bal.	12,200		

The Debit or Credit for each transaction.

The balance of the account after each transaction.

CASH					**Account No. 101**	
Date	**Item**	**Post Ref.**	**Debit**	**Credit**	**Balance**	
					Debit	**Credit**
2016						
Nov. 1		J1	30,000		30,000	
Nov. 2		J1		20,000	10,000	
Nov. 8		J1	5,500		15,500	
Nov. 15		J1		3,200	12,300	
Nov. 21		J1		300	12,000	
Nov. 22		J1	2,000		14,000	
Nov. 25		J1		5,000	9,000	
Dec. 1		J2		3,000	6,000	
Dec. 1		J2		1,200	4,800	
Dec. 15		J2		1,200	3,600	
Dec. 21		J2	600		4,200	
Dec. 28		J2	8,000		12,200	

related journal entry. Exhibit 2-9 shows the posting and associated posting references for Transaction 1 of Smart Touch Learning. Remember, in a computerized environment, this process is completed automatically when the user enters the journal entry.

Exhibit 2-9 **Posting References**

The page number from the journal.

Page 1

Date	Accounts and Explanation	Post. Ref.	Debit	Credit
Nov. 1	Cash	101	30,000	
	Common Stock	301		30,000
	Issued common stock.			

CASH **Account No. 101**

The account number from the ledger.

Date	Item	Post. Ref.	Debit	Credit	Balance	
					Debit	Credit
2016						
Nov. 1		J1	30,000		30,000	

COMMON STOCK **Account No. 301**

Date	Item	Post. Ref.	Debit	Credit	Balance	
					Debit	Credit
2016						
Nov. 1		J1		30,000		30,000

Try It!

21. EMB Consulting Services had the following transactions for the month of November. Journalize the transactions and include an explanation with each entry.

Nov. 1	The business received $10,000 cash and issued common stock.
15	Purchased office supplies on account, $400.
18	Paid advertising bill, $150.
20	Received $1,000 from customers for services rendered.
28	Cash dividends of $500 were paid to stockholders.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S2-4 through S2-7. MyAccountingLab

WHAT IS THE TRIAL BALANCE?

After the transactions are recorded in the journal and then posted to the ledger, a **trial balance** can be prepared. The trial balance summarizes the ledger by listing all the accounts with their balances—assets first, followed by liabilities, and then equity. In a manual accounting system, the trial balance provides an accuracy check by showing whether total debits equal total credits. In all types of systems, the trial balance is a useful summary of the accounts and their balances because it shows the balances on a specific date for all accounts in a company's accounting system. Exhibit 2-10 is the trial balance of Smart Touch Learning at December 31, 2016.

Learning Objective 4
Prepare the trial balance and illustrate how to use the trial balance to prepare financial statements

Trial Balance
A list of all ledger accounts with their balances at a point in time.

Exhibit 2-10 | **Trial Balance**

SMART TOUCH LEARNING
Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 12,200	
Accounts Receivable	1,000	
Office Supplies	500	
Prepaid Rent	3,000	
Furniture	18,000	
Building	60,000	
Land	20,000	
Accounts Payable		$ 200
Utilities Payable		100
Unearned Revenue		600
Notes Payable		60,000
Common Stock		48,000
Dividends	5,000	
Service Revenue		16,500
Rent Expense	2,000	
Salaries Expense	3,600	
Utilities Expense	100	
Total	**$ 125,400**	**$ 125,400**

The trial balance and the balance sheet are not the same. Make sure you understand the differences between these two documents. A trial balance verifies the equality of debits and credits and is an internal document used only by employees of the company. The balance sheet, on the other hand, presents the business's accounting equation and is a financial statement that can be used by both internal and external users.

Preparing Financial Statements from the Trial Balance

In addition to proving the equality of debits and credits, the trial balance is also used to prepare the financial statements. The account balances are taken directly from the trial balance and are used to prepare the income statement, statement of retained earnings, and balance sheet. In Exhibit 2-11 (on the next page), we present the financial statements for the two months ended December 31, 2016, for Smart Touch Learning.

Exhibit 2-11 Smart Touch Learning's Financial Statements

SMART TOUCH LEARNING
Income Statement
Two Months Ended December 31, 2016

Revenues:		
Service Revenue		$ 16,500
Expenses:		
Salaries Expense	$ 3,600	
Rent Expense	2,000	
Utilities Expense	100	
Total Expenses		5,700
Net Income		**$ 10,800**

SMART TOUCH LEARNING
Statement of Retained Earnings
Two Months Ended December 31, 2016

Retained Earnings, November 1, 2016	$ 0
Net income for the two months	10,800
	10,800
Dividends	(5,000)
Retained Earnings, December 31, 2016	**$ 5,800**

SMART TOUCH LEARNING
Balance Sheet
December 31, 2016

Assets		**Liabilities**	
Cash	$ 12,200	Accounts Payable	$ 200
Accounts Receivable	1,000	Utilities Payable	100
Office Supplies	500	Unearned Revenue	600
Prepaid Rent	3,000	Notes Payable	60,000
Furniture	18,000	Total Liabilities	60,900
Building	60,000		
Land	20,000	**Stockholders' Equity**	
		Common Stock	48,000
		Retained Earnings	5,800
		Total Stockholders' Equity	53,800
Total Assets	**$ 114,700**	Total Liabilities and Stockholders' Equity	**$ 114,700**

Correcting Trial Balance Errors

Throughout the accounting process, total debits should always equal total credits. If they do not, there is an error. Computerized accounting systems eliminate many errors because most software will not let you make a journal entry that does not balance. But computers cannot *eliminate* all errors because humans can input the wrong data.

Balancing errors can be detected by computing the difference between total debits and total credits on the trial balance. Then perform one or more of the following actions:

1. **Search the trial balance for a missing account.** For example, suppose the accountant omitted the Dividends account from the trial balance in Exhibit 2-10. Total debits would then be $120,400 ($125,400 − $5,000). Trace each account from the ledger to the trial balance, and you will locate the missing account.
2. **Divide the difference between total debits and total credits by 2.** A debit treated as a credit, or vice versa, doubles the amount of the error. Suppose the accountant posted a $500 credit as a debit. Total debits contain the $500, and total credits omit the $500. The out-of-balance amount is $1,000. Dividing the difference by 2 identifies the $500

amount of the transaction. Then search the journal or ledger for a $500 transaction and trace it to the account affected.

3. **Divide the out-of-balance amount by 9.** If the result is evenly divisible by 9, the error may be a *slide* (example: writing $1,000 as $100 or writing $100 as $1,000) or a *transposition* (example: listing $1,200 as $2,100). Suppose, for example, that the accountant entered the $5,000 Dividends as $50,000 on the trial balance. This is a slide-type error. Total debits would differ from total credits by $45,000 ($50,000 − $5,000 = $45,000). Dividing $45,000 by 9 yields $5,000, the correct amount of the dividends. Look for an account in the ledger with a $5,000 balance until you reach the Dividends account. You have then found the error.

Total debits can equal total credits on the trial balance; however, there still could be errors in individual account balances because an incorrect account might have been selected in an individual journal entry.

Try It!

22. Using the following accounts and their balances, prepare the trial balance for Cooper Furniture Repair as of December 31, 2016. All accounts have normal balances.

Cash	$ 7,000	Advertising Expense	$ 1,200
Unearned Revenue	4,500	Utilities Expense	800
Equipment	10,000	Rent Expense	5,000
Service Revenue	8,000	Accounts Payable	2,300
Common Stock	12,200	Dividends	3,000

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S2-8. MyAccountingLab

HOW DO YOU USE THE DEBT RATIO TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 5
Use the debt ratio to evaluate business performance

Debt Ratio
Shows the proportion of assets financed with debt. Total liabilities / Total assets.

Previously you learned that evaluating a company's return on assets (Net income / Average total assets) can help in determining how well a company is performing. In this chapter, you learn about another tool that can be used when reviewing financial statements. The **debt ratio** shows the proportion of assets financed with debt and is calculated by dividing total liabilities by total assets. It can be used to evaluate a business's ability to pay its debts.

Debt ratio = Total liabilities / Total assets

Think about the accounting equation (Assets = Liabilities + Equity). The equation shows who can claim the assets. The liabilities represent the claims of the creditors, and the equity represents the claims of the stockholders. Companies that have a high percentage of liabilities are at greater risk of default. If they are unable to pay their creditors as the amounts become due, the creditors have the right to claim the assets. The debt ratio calculates the percentage of assets that are financed with liabilities.

Let's look at **Green Mountain Coffee Roasters, Inc.** and evaluate its ability to pay its debts. On its 2013 balance sheet (located in Appendix A), Green Mountain reported (in thousands) total liabilities of \$1,125,978 (\$597,063 + \$160,221 + \$76,061 + \$252,867 + \$28,721 + \$11,045) and total assets of \$3,761,548. The debt ratio for Green Mountain as of September 28, 2013, follows:

Debt ratio = Total liabilities / Total assets
= \$1,125,978 / \$3,761,548 = 0.299 = 29.9%*

*rounded

A debt ratio of 29.9% means that approximately thirty percent of the assets of Green Mountain are financed with debt. The other 70.1% (100% − 29.9%) are financed by stockholders of the corporation. The debt ratio indicates the risk of a company. The higher the debt ratio, the higher the risk. All liabilities must eventually be paid, and the debt ratio is one indication of the ability of the company to fulfill these obligations.

DECISIONS

Would you purchase equipment with debt?

Jackson Russell works as a district sales manager for a large pharmaceutical sales company. Jackson would like to purchase a new high-tech marketing display that he will be able to use at upcoming medical conferences. The marketing display will allow his customers to access up-to-date information and research statistics on the pharmaceuticals that his company sells by using multiple touch screen computers. He believes that the marketing display will significantly increase the sales revenue of the products he sells. The only problem is that the marketing display will cost \$50,000, and he does not have the cash in his budget to purchase the display. Jackson will need to purchase the display using debt, which will increase the district's debt ratio from 20% to 58%. Jackson is aware that his company closely monitors the district's debt ratio and has a policy that the district must maintain a ratio below 55%. Should Jackson purchase the equipment?

Solution

If the company has a policy that the district's debt ratio must remain below 55%, then Jackson should not purchase the equipment. However, there might be a way to structure the purchase so that the district's debt ratio would stay below 55%. Jackson either needs to incur less debt or increase his total assets. He could do this in several possible ways. One alternative might be for Jackson to pay for part of the display equipment with cash and only finance part of it with debt. Even putting as little as \$10,000 cash down on the equipment would keep the debt ratio below 55%. Another alternative might be for his district to recognize revenue. If there are open sales opportunities that his employees could close, they might be able to increase total assets (and revenue) and, thereby, decrease the debt ratio.

Try It!

23. Using the following accounts and their balances, calculate the debt ratio for Cooper Furniture Repair as of December 31, 2016.

Cash	\$ 7,000	Advertising Expense	\$ 1,200
Unearned Revenue	4,500	Utilities Expense	800
Equipment	10,000	Rent Expense	5,000
Service Revenue	8,000	Accounts Payable	2,300
Common Stock	12,200	Dividends	3,000

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S2-9. MyAccountingLab

REVIEW

> Things You Should Know

1. What is an account?

- An account is a detailed record of all increases and decreases that have occurred in an individual asset, liability, or equity during a specific period.
- Common asset accounts: Cash, Accounts Receivable, Notes Receivable, Prepaid Expenses, Land, Building, Furniture
- Common liability accounts: Accounts Payable, Notes Payable, Taxes Payable, Salaries Payable, Unearned Revenue
- Common equity accounts: Common Stock, Dividends, Revenues, Expenses
- A chart of accounts lists a company's accounts along with account numbers.
- A ledger shows the increases and decreases in each account along with their balances.

2. What is double-entry accounting?

- Double-entry accounting requires transactions to be recorded into at least two accounts.
- The T-account is shaped like a capital *T* with debits posted to the left side of the vertical line and credits posted to the right side of the vertical line.
- Debit = Left
- Credit = Right
- Assets, Dividends, and Expenses are increased with a debit and decreased with a credit.
- Liabilities, Common Stock, and Revenues are increased with a credit and decreased with a debit.
- The normal balance of an account is the increase side of an account.

3. How do you record transactions?

- Source documents provide the evidence and data for transactions.
- Transactions are recorded in a journal, and then the journal entries are posted (transferred) to the ledger.
- Transactions are journalized and posted using five steps:

  Step 1: Identify the accounts and the account type.

  Step 2: Decide whether each account increases or decreases, then apply the rules of debits and credits.

  Step 3: Record the transaction in the journal.

  Step 4: Post the journal entry to the ledger.

  Step 5: Determine whether the accounting equation is in balance.

4. What is the trial balance?

- The trial balance summarizes the ledger by listing all the accounts with their balances.
- Assets are listed first, followed by liabilities, and then equity.
- The trial balance ensures that debits equal credits and is used to prepare the financial statements.

5. How do you use the debt ratio to evaluate business performance?

- The debt ratio can be used to evaluate a business's ability to pay its debts.
- Debt ratio = Total liabilities / Total assets.

> Summary Problem

The trial balance of Harper Service Center as of February 29, 2016, follows:

HARPER SERVICE CENTER
Trial Balance
February 29, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 23,900	
Accounts Receivable	4,500	
Office Supplies	0	
Land	0	
Accounts Payable		$ 2,000
Utilities Payable		0
Unearned Revenue		0
Notes Payable		0
Common Stock		18,500
Dividends	0	
Service Revenue		10,000
Salaries Expense	800	
Rent Expense	1,000	
Interest Expense	0	
Utilities Expense	300	
Total	**$ 30,500**	**$ 30,500**

During March, the business engaged in the following transactions:

Mar. 2	Borrowed $45,000 from the bank and signed a note payable in the name of the business.
4	Paid cash of $40,000 to acquire land.
9	Performed services for a customer and received cash of $5,000.
13	Purchased office supplies on account, $300.
15	Performed services for a customer on account, $2,600.
18	Paid $1,200 on account.
21	Paid the following cash expenses: salaries, $3,000; rent, $1,500; and interest, $400.
25	Received $3,100 from a customer on account.
27	Received a $200 utility bill that will be paid next month.
29	Received $1,500 for services to be performed next month.
30	Cash dividends of $1,800 were paid to stockholders.

Requirements

1. Open the accounts listed in the trial balance using the balances indicated. Use the T-account format.
2. Journalize each transaction including explanations.
3. Post the journal entries to the ledger (use T-account format).
4. Prepare the trial balance of Harper Service Center as of March 31, 2016.

> Solution

Requirement 1

ASSETS	=	LIABILITIES	+	EQUITY						
				Contributed Capital	+	Retained Earnings				
Cash	=	**Accounts Payable**	+	**Common Stock**	−	**Dividends**	+	**Service Revenue**	−	**Salaries Expense**
Bal. 23,900 |		| 2,000 Bal.		| 18,500 Bal.		Bal. 0 |		| 10,000 Bal.		Bal. 800 |
Accounts Receivable		**Utilities Payable**								**Rent Expense**
Bal. 4,500 |		| 0 Bal.								Bal. 1,000 |
Office Supplies		**Unearned Revenue**								**Interest Expense**
Bal. 0 |		| 0 Bal.								Bal. 0 |
Land		**Notes Payable**								**Utilities Expense**
Bal. 0 |		| 0 Bal.								Bal. 300 |

Requirement 2

Date	Accounts and Explanation	Debit	Credit
Mar. 2	Cash	45,000	
	Notes Payable		45,000
	Borrowed cash on notes payable.		
4	Land	40,000	
	Cash		40,000
	Purchased land with cash.		
9	Cash	5,000	
	Service Revenue		5,000
	Performed services and received cash.		
13	Office Supplies	300	
	Accounts Payable		300
	Purchased office supplies on account.		
15	Accounts Receivable	2,600	
	Service Revenue		2,600
	Performed services on account.		
18	Accounts Payable	1,200	
	Cash		1,200
	Paid cash on account.		
21	Salaries Expense	3,000	
	Rent Expense	1,500	
	Interest Expense	400	
	Cash		4,900
	Paid cash expenses.		
25	Cash	3,100	
	Accounts Receivable		3,100
	Received cash on account.		
27	Utilities Expense	200	
	Utilities Payable		200
	Received utility bill.		
29	Cash	1,500	
	Unearned Revenue		1,500
	Collected cash for future services.		
30	Dividends	1,800	
	Cash		1,800
	Paid dividends.		

Requirement 3

ASSETS = **LIABILITIES** + **EQUITY**

Contributed Capital + **Retained Earnings**

Cash = **Accounts Payable** + **Common Stock** − **Dividends** + **Service Revenue** − **Salaries Expense**

Cash

Bal.	23,900	40,000	Mar. 4
Mar. 2	45,000	1,200	Mar.18
Mar. 9	5,000	4,900	Mar. 21
Mar. 25	3,100	1,800	Mar. 30
Mar. 29	1,500		
Bal.	30,600		

Accounts Receivable

Bal.	4,500	3,100	Mar. 25
Mar. 15	2,600		
Bal.	4,000		

Office Supplies

Bal.	0		
Mar. 13	300		
Bal.	300		

Land

Bal.	0		
Mar. 4	40,000		
Bal.	40,000		

Accounts Payable

Mar.18	1,200	2,000	Bal.
		300	Mar. 13
		1,100	Bal.

Utilities Payable

		0	Bal.
		200	Mar. 27
		200	Bal.

Unearned Revenue

		0	Bal.
		1,500	Mar. 29
		1,500	Bal.

Notes Payable

		0	Bal.
		45,000	Mar. 2
		45,000	Bal.

Common Stock

		18,500	Bal.
		18,500	Bal.

Dividends

Bal.	0		
Mar. 30	1,800		
Bal.	1,800		

Service Revenue

		10,000	Bal.
		5,000	Mar. 9
		2,600	Mar. 15
		17,600	Bal.

Salaries Expense

Bal.	800		
Mar. 21	3,000		
Bal.	3,800		

Rent Expense

Bal.	1,000		
Mar. 21	1,500		
Bal.	2,500		

Interest Expense

Bal.	0		
Mar. 21	400		
Bal.	400		

Utilities Expense

Bal.	300		
Mar. 27	200		
Bal.	500		

Requirement 4

HARPER SERVICE CENTER
Trial Balance
March 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 30,600	
Accounts Receivable	4,000	
Office Supplies	300	
Land	40,000	
Accounts Payable		$ 1,100
Utilities Payable		200
Unearned Revenue		1,500
Notes Payable		45,000
Common Stock		18,500
Dividends	1,800	
Service Revenue		17,600
Salaries Expense	3,800	
Rent Expense	2,500	
Interest Expense	400	
Utilities Expense	500	
Total	**$ 83,900**	**$ 83,900**

> Key Terms

Account (p. 80)
Accrued Liability (p. 81)
Chart of Accounts (p. 82)
Compound Journal Entry (p. 93)
Credit (p. 84)
Debit (p. 84)
Debt Ratio (p. 105)
Double-Entry System (p. 84)
Journal (p. 88)
Ledger (p. 83)
Normal Balance (p. 85)
Notes Payable (p. 81)
Notes Receivable (p. 81)
Posting (p. 88)
Prepaid Expense (p. 81)
Source Document (p. 87)
T-Account (p. 84)
Trial Balance (p. 103)
Unearned Revenue (p. 81)

> Quick Check

Learning Objective 1

1. The detailed record of the changes in a particular asset, liability, or stockholders' equity is called

a. an account.
b. a journal.
c. a ledger.
d. a trial balance.

Learning Objective 1

2. Which of the following accounts is a liability?

a. Accounts Receivable
b. Service Revenue
c. Unearned Revenue
d. Prepaid Rent Expense

Learning Objective 2

3. The left side of an account is used to record which of the following?

a. Debit or credit, depending on the type of account
b. Increases
c. Credits
d. Debits

Learning Objective 2

4. Which of the following statements is correct?

a. Prepaid Expenses are decreased with a debit.
b. Unearned Revenue is increased with a debit.
c. Rent Expense is increased with a credit.
d. Accounts Payable is increased with a credit.

Learning Objective 3

5. Your business purchased office supplies of $2,500 on account. The journal entry to record this transaction is as follows:

Date	Accounts and Explanation	Debit	Credit
a.	Office Supplies	2,500	
	Accounts Receivable		2,500
b.	Office Supplies	2,500	
	Accounts Payable		2,500
c.	Accounts Payable	2,500	
	Office Supplies		2,500
d.	Cash	2,500	
	Accounts Payable		2,500

Learning Objective 3

6. Sedlor Properties purchased office supplies on account for $800. Which journal entry records the payment on account of those office supplies?

Date	Accounts and Explanation	Debit	Credit
a.	Accounts Payable	800	
	Accounts Receivable		800
b.	Accounts Payable	800	
	Cash		800
c.	Cash	800	
	Accounts Payable		800
d.	Office Supplies	800	
	Cash		800

Learning Objective 3

7. Posting a $2,500 purchase of office supplies on account appears as follows:

a.

Cash		**Office Supplies**	
	2,500	2,500	

b.

Office Supplies		**Accounts Payable**	
	2,500	2,500	

c.

Office Supplies		**Accounts Receivable**	
2,500			2,500

d.

Office Supplies		**Accounts Payable**	
2,500			2,500

Learning Objective 4

8. Pixel Copies recorded a cash collection on account by debiting Cash and crediting Accounts Payable. What will the trial balance show for this error?
   - **a.** Cash is overstated
   - **b.** Liabilities are overstated
   - **c.** Expenses are overstated
   - **d.** The trial balance will not balance

Learning Objectives 3, 4

9. Which sequence correctly summarizes the accounting process?
   - **a.** Journalize transactions, post to the accounts, prepare a trial balance
   - **b.** Journalize transactions, prepare a trial balance, post to the accounts
   - **c.** Post to the accounts, journalize transactions, prepare a trial balance
   - **d.** Prepare a trial balance, journalize transactions, post to the accounts

Learning Objective 5

10. Nathville Laundry reported assets of $800 and equity of $480. What is Nathville's debt ratio?
   - **a.** 60%
   - **b.** 40%
   - **c.** 67%
   - **d.** Not enough information is provided

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. Identify the three categories of the accounting equation, and list at least four accounts associated with each category.
2. What is the purpose of the chart of accounts? Explain the numbering typically associated with the accounts.
3. What does a ledger show? What's the difference between a ledger and the chart of accounts?
4. Accounting uses a double-entry system. Explain what this sentence means.
5. What is a T-account? On which side is the debit? On which side is the credit? Where does the account name go on a T-account?
6. When are debits increases? When are debits decreases?
7. When are credits increases? When are credits decreases?
8. Identify which types of accounts have a normal debit balance and which types of accounts have a normal credit balance.
9. What are source documents? Provide examples of source documents that a business might use.
10. Where are transactions initially recorded?
11. Explain the five steps in journalizing and posting transactions.
12. What are the four parts of a journal entry?
13. What is involved in the posting process?
14. What is the purpose of the trial balance?
15. What is the difference between the trial balance and the balance sheet?
16. If total debits equal total credits on the trial balance, is the trial balance error-free? Explain your answer.
17. What is the calculation for the debt ratio? Explain what the debt ratio evaluates.

> Short Exercises

Learning Objective 1

S2-1 Identifying accounts

Consider the following accounts:

a. Notes Receivable
b. Common Stock
c. Prepaid Insurance
d. Notes Payable
e. Rent Revenue
f. Taxes Payable
g. Rent Expense
h. Furniture
i. Dividends
j. Unearned Revenue

Identify each account as an asset (A), liability (L), or equity (E).

S2-2 Identifying increases and decreases in accounts

Learning Objective 2

For each account, identify whether the changes would be recorded as a debit (DR) or credit (CR).

a. Increase to Accounts Receivable
b. Decrease to Unearned Revenue
c. Decrease to Cash
d. Increase to Interest Expense
e. Increase to Salaries Payable
f. Decrease to Prepaid Rent
g. Increase to Common Stock
h. Increase to Notes Receivable
i. Decrease to Accounts Payable
j. Increase to Interest Revenue

S2-3 Identifying normal balances

Learning Objective 2

For each account, identify whether the normal balance is a debit (DR) or credit (CR).

a. Notes Payable
b. Dividends
c. Service Revenue
d. Land
e. Unearned Revenue
f. Common Stock
g. Utilities Expense
h. Office Supplies
i. Advertising Expense
j. Interest Payable

S2-4 Journalizing transactions

Learning Objective 3

Jack Davis opened a medical practice in Sacramento, California, and had the following transactions during the month of January.

Jan. 1	The business received $35,000 cash and issued common stock to Davis.
2	Purchased medical supplies on account, $13,000.
4	Performed services for patients receiving $1,900.
12	Paid monthly office rent of $2,600.
15	Recorded $10,000 revenue for services rendered to patients on account.

Journalize the transactions of Jack Davis, M.D. Include an explanation with each entry.

S2-5 Journalizing transactions

Learning Objective 3

Arkansas Sales Consultants completed the following transactions during the latter part of January:

Jan. 22	Performed services for customers on account, $9,000.
30	Received cash on account from customers, $7,000.
31	Received a utility bill, $210, which will be paid during February.
31	Paid monthly salary to salesman, $2,400.
31	Received $2,475 for three months of consulting service to be performed starting in February.
31	Cash dividends of $900 were paid to stockholders.

Journalize the transactions of Arkansas Sales Consultants. Include an explanation with each journal entry.

Learning Objective 2

S2-6 Calculating the balance of a T-account

Accounts Payable

May 2	6,000	14,000	May 1
May 22	12,000	1,000	May 5
		7,000	May 15
		500	May 23

Calculate the Accounts Payable balance.

Learning Objective 3

S2-7 Journalizing transactions and posting to T-accounts

Kenneth Watson Optical Dispensary completed the following transactions during the latter part of March:

Mar. 15	Purchased office supplies on account, $2,600.
28	Paid $1,300 on account.

Requirements

1. Journalize the transactions of Kenneth Watson Optical Dispensary. Include an explanation with each journal entry.
2. Open the following accounts (use T-account format): Cash (Beginning Balance of $23,000), Office Supplies, and Accounts Payable. Post the journal entries from Requirement 1 to the accounts, and compute the balance in each account.

Learning Objective 4

S2-8 Preparing a trial balance

Henderson Floor Coverings reported the following summarized data at December 31, 2016. Accounts appear in no particular order, and all have normal balances.

Service Revenue	$ 38,000	Salaries Payable	$ 15,000
Equipment	45,000	Salaries Expense	1,800
Rent Expense	10,000	Cash	12,000
Common Stock	25,000	Accounts Receivable	4,000
Accounts Payable	1,500	Interest Payable	7,500
Dividends	12,900	Utilities Expense	1,300

Prepare the trial balance of Henderson Floor Coverings at December 31, 2016.

Learning Objective 5

S2-9 Calculating debt ratio

Vacuum Magic Carpet Care had the following total assets, liabilities, and equity as of October 31:

Assets	$ 240,000
Liabilities	60,000
Equity	180,000

What is Vacuum Magic Carpet Care's debt ratio as of October 31?

> Exercises

E2-10 Using accounting vocabulary

Learning Objectives 1, 2, 3, 4

Match the accounting terms with the corresponding definitions.

1. Posting
2. Account
3. Debit
4. Journal
5. Chart of accounts
6. Trial balance
7. Normal balance
8. Ledger
9. Credit
10. Compound journal entry

a. A detailed record of all increases and decreases that have occurred in a particular asset, liability, or equity during a period
b. The record holding all the accounts of a business, the changes in those accounts, and their balances
c. A journal entry that is characterized by having multiple debits and/or multiple credits
d. A record of transactions in date order
e. Left side of a T-account
f. Side of an account where increases are recorded
g. Transferring amounts from the journal to the ledger
h. Right side of a T-account
i. A list of all accounts with their balances at a point in time
j. A list of all accounts with their account numbers

E2-11 Creating a chart of accounts

Learning Objective 1

Raymond Autobody Shop has the following accounts:

Accounts Payable
Cash
Utilities Expense
Automotive Supplies
Dividends
Retained Earnings
Service Revenue
Equipment
Common Stock
Advertising Expense
Unearned Revenue

Create a chart of accounts for Raymond Autobody Shop using the standard numbering system. Each account is separated by a factor of 10. For example, the first asset account will be 100 and the next asset account will 110.

E2-12 Identifying accounts, increases in accounts, and normal balances

Learning Objectives 1, 2

a. Interest Revenue
b. Accounts Payable
c. Common Stock
d. Office Supplies
e. Advertising Expense
f. Unearned Revenue
g. Prepaid Rent
h. Utilities Expense
i. Dividends
j. Service Revenue

Requirements

1. Identify each account as asset (A), liability (L), or equity (E).
2. Identify whether the account is increased with a debit (DR) or credit (CR).
3. Identify whether the normal balance is a debit (DR) or credit (CR).

Learning Objective 2

E2-13 Identifying increases and decreases in accounts and normal balances

Insert the missing information into the accounting equation. Signify increases as Incr. and decreases as Decr.

(a)		=	**LIABILITIES**		+	**(b)**										
						Contributed Capital		+	**Retained Earnings**							
ASSETS		=	**(c)**		+	**Common Stock**		−	**(d)**		+	**Revenues**		−	**Expenses**	
(e) Debit	Decr. (n)		Decr. (o)	(f) Credit		(g) (p)	(h) Credit		(i) (q)	(j) Credit		(k) Debit	(l) Credit		Incr. (r)	(m) Credit

Learning Objective 3

E2-14 Identifying source documents

For each transaction, identify a possible source document.

a. The business received $20,000 cash and issued common stock to stockholders.

b. Purchased office supplies on account, $500.

c. Recorded $1,000 revenue for services rendered to customers.

Learning Objective 3

E2-15 Analyzing and journalizing transactions

As the manager of Margarita Mexican Restaurant, you must deal with a variety of business transactions. Provide an explanation for the following transactions:

a. Debit Equipment and credit Cash.

b. Debit Dividends and credit Cash.

c. Debit Wages Payable and credit Cash.

d. Debit Equipment and credit Common Stock.

e. Debit Cash and credit Unearned Revenue.

f. Debit Advertising Expense and credit Cash.

g. Debit Cash and credit Service Revenue.

Use the following information to answer Exercises E2-16 and E2-17.

The following transactions occurred for London Engineering:

Jul. 2	Received $12,000 contribution from Brett London in exchange for common stock.
4	Paid utilities expense of $410.
5	Purchased equipment on account, $2,200.
10	Performed services for a client on account, $2,800.
12	Borrowed $7,500 cash, signing a notes payable.
19	Cash dividends of $750 were paid to stockholders.
21	Purchased office supplies for $860 and paid cash.
27	Paid the liability from July 5.

Learning Objective 3

E2-16 Analyzing and journalizing transactions

Journalize the transactions of London Engineering. Include an explanation with each journal entry. Use the following accounts: Cash; Accounts Receivable; Office Supplies; Equipment; Accounts Payable; Notes Payable; Common Stock; Dividends; Service Revenue; Utilities Expense.

E2-17 Posting journal entries to T-accounts

Learning Objective 3

3. Cash Balance $15,280

Requirements

1. Open the following T-accounts for London Engineering: Cash; Accounts Receivable; Office Supplies; Equipment; Accounts Payable; Notes Payable; Common Stock; Dividends; Service Revenue; Utilities Expense.
2. Post the journal entries to the T-accounts. Also transfer the dates to the T-accounts.
3. Compute the July 31 balance for each account.

Use the following information to answer Exercises E2-18 and E2-19.

The following transactions occurred for Wilson Technology Solutions:

May 1	The business received cash of $85,000 and issued common stock to Zack Wilson.
2	Purchased office supplies on account, $550.
4	Paid $57,000 cash for building and land. The building had a fair market value of $48,000.
6	Performed services for customers and received cash, $3,600.
9	Paid $450 on accounts payable.
17	Performed services for customers on account, $3,400.
19	Paid rent expense for the month, $1,400.
20	Received $1,300 from customers for services to be performed next month.
21	Paid $300 for advertising in next month's *IT Technology* magazine.
23	Received $2,600 cash on account from a customer.
31	Incurred and paid salaries, $1,200.

E2-18 Analyzing and journalizing transactions

Learning Objective 3

Journalize the transactions of Wilson Technology Solutions. Include an explanation with each journal entry. Use the following accounts: Cash; Accounts Receivable; Office Supplies; Prepaid Advertising; Building; Land; Accounts Payable; Unearned Revenue; Common Stock; Service Revenue; Rent Expense; Salaries Expense.

E2-19 Posting journal entries to four-column accounts

Learning Objective 3

2. Cash Balance $32,150

Requirements

1. Open four-column accounts using the following account numbers: Cash, 110; Accounts Receivable, 120; Office Supplies, 130; Prepaid Advertising, 140; Building, 150; Land, 160; Accounts Payable, 210; Unearned Revenue, 220; Common Stock, 310; Service Revenue, 410; Rent Expense, 510; Salaries Expense, 520.
2. Post the journal entries to the four-column accounts, and determine the balance in the account after each transaction. Assume that the journal entries were recorded on page 10 of the journal. Make sure to complete the Post. Ref. columns in the journal and ledger.

Learning Objective 3

E2-20 Analyzing transactions from T-accounts

The first nine transactions of North-West Airplane Repair have been posted to the T-accounts. Provide an explanation for each of the nine transactions.

ASSETS = **LIABILITIES** + **EQUITY**

Contributed Capital + **Retained Earnings**

Cash = **Accounts Payable** + **Common Stock** − **Dividends** + **Service Revenue** − **Rent Expense**

Cash

(1)	370,000	360,000	(2)
(3)	260,000	1,200	(5)
(9)	21,000	1,500	(6)
		3,900	(7)
		7,000	(8)

Office Supplies

(4)	1,500		

Building

(2)	360,000		

Accounts Payable

(5)	1,200	1,500	(4)

Notes Payable

		260,000	(3)

Common Stock

		370,000	(1)

Dividends

(8)	7,000		

Service Revenue

		21,000	(9)

Rent Expense

(7)	1,400		

Salaries Expense

(7)	2,500		

Property Tax Expense

(6)	1,500		

Learning Objective 3

E2-21 Journalizing transactions from T-accounts

In December 2016, the first five transactions of Atkins' Lawn Care Company have been posted to the T-accounts. Prepare the journal entries that served as the sources for the five transactions. Include an explanation for each entry.

Cash

(1)	56,000	37,000	(3)
(4)	49,000	5,900	(5)

Office Supplies

(2)	200		

Equipment

(5)	5,900		

Building

(3)	37,000		

Accounts Payable

		200	(2)

Notes Payable

		49,000	(4)

Common Stock

		56,000	(1)

Learning Objective 4

Total Debits $211,500

E2-22 Preparing a trial balance

The accounts of Aker Moving Company follow with their normal balances as of August 31, 2016. The accounts are listed in no particular order.

Common Stock	$ 53,300	Trucks	$ 132,000
Insurance Expense	600	Fuel Expense	3,000
Accounts Payable	4,200	Dividends	6,200
Service Revenue	92,000	Utilities Expense	500
Building	48,000	Accounts Receivable	8,700
Advertising Expense	200	Notes Payable	62,000
Salaries Expense	7,000	Office Supplies	300
Cash	5,000		

Prepare Aker's trial balance as of August 31, 2016.

E2-23 Preparing a trial balance from T-accounts

Learning Objective 4

Total Debits $85,200

The T-accounts of McMahon Farm Equipment Repair follow as of May 31, 2016.

ASSETS = **LIABILITIES** + **EQUITY**

Contributed Capital + **Retained Earnings**

Cash = **Salaries Payable** + **Common Stock** − **Dividends** + **Service Revenue** − **Salaries Expense**

Cash

29,000	12,000
2,800	900
1,300	4,400
	1,200
	1,920

Accounts Receivable

4,400	1,300

Equipment

18,000	

Building

32,000	

Land

12,000	

Salaries Payable

900	4,300

Notes Payable

4,400	32,000

Common Stock

	29,000
	18,000

Dividends

1,200	

Service Revenue

	4,400
	2,800

Salaries Expense

1,300	
4,300	

Property Tax Expense

300	

Advertising Expense

320	

Prepare McMahon Farm Equipment Repair's trial balance as of May 31, 2016.

E2-24 Journalizing transactions, posting journal entries to four-column accounts, and preparing a trial balance

Learning Objectives 3, 4

3\. Total Debits $25,250

The following transactions occurred during the month for Tori Peel, CPA:

Jun. 1	Peel opened an accounting firm by contributing $13,500 cash and office furniture with a fair market value of $5,400 in exchange for common stock.
5	Paid monthly rent of $1,300.
9	Purchased office supplies on account, $800.
14	Paid employee's salary, $1,700.
18	Received a bill for utilities to be paid next month, $250.
21	Paid $600 of the accounts payable created on June 9.
25	Performed accounting services on account, $5,900.
28	Paid cash dividends of $6,900.

Requirements

1. Open the following four-column accounts of Tori Peel, CPA: Cash, 110; Accounts Receivable, 120; Office Supplies, 130; Office Furniture, 140; Accounts Payable, 210; Utilities Payable, 220; Common Stock, 310; Dividends, 320; Service Revenue, 410; Salaries Expense, 510; Rent Expense, 520; Utilities Expense, 530.
2. Journalize the transactions, and then post the journal entries to the four-column accounts. Explanations are not required for the journal entries. Keep a running balance in each account. Assume the journal entries are recorded on page 10 of the journal.
3. Prepare the trial balance as of June 30, 2016.

Learning Objective 4

E2-25 Analyzing accounting errors

Beth Rothman has trouble keeping her debits and credits equal. During a recent month, Beth made the following accounting errors:

- **a.** In preparing the trial balance, Beth omitted a $4,000 Notes Receivable. The credit to Cash was correct.
- **b.** Beth posted a $90 Utilities Expense as $900. The credit to Cash was correct.
- **c.** In recording a $400 payment on account, Beth debited Equipment instead of Accounts Payable.
- **d.** In journalizing a receipt of cash for service revenue, Beth debited Cash for $800 instead of the correct amount of $80. The credit was correct.
- **e.** Beth recorded a $130 purchase of office supplies on account by debiting Office Supplies and crediting Accounts Payable for $310.

Requirements

1. For each of these errors, state whether total debits equal total credits on the trial balance.
2. Identify each account that has an incorrect balance, and the amount and direction of the error (such as "Accounts Receivable $500 too high").

Learning Objective 4

Total Debits $39,750

E2-26 Correcting errors in a trial balance

The accountant for Town and Country Painting Specialists is having a hard time preparing the trial balance as of November 30, 2016:

TOWN AND COUNTRY PAINTING SPECIALISTS
Trial Balance
November 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Painting Equipment	$ 13,000	
Cash	12,900	
Accounts Receivable	1,100	
Advertising Expense	450	
Dividends		$ 7,000
Accounts Payable		3,100
Rent Expense	2,700	
Common Stock	15,000	
Service Revenue		19,650
Unearned Revenue	2,000	
Salaries Expense	2,100	
Office Supplies		300
Utilities Expense	200	
Total	**$ 49,450**	**$ 30,050**

Prepare the corrected trial balance as of November 30, 2016. Assume all amounts are correct and all accounts have normal balances.

E2-27 Correcting errors in a trial balance

Learning Objective 4

Total Debits $34,900

The following trial balance of Josh Maddy Tutoring Service at May 31, 2016, does not balance.

JOSH MADDY TUTORING SERVICE
Trial Balance
May 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 2,900	
Accounts Receivable	2,000	
Office Supplies	600	
Computer Equipment	16,000	
Accounts Payable		$ 11,500
Utilities Payable		200
Common Stock		11,800
Dividends	9,800	
Service Revenue		9,700
Salaries Expense	1,600	
Rent Expense	900	
Utilities Expense	700	
Total	**$ 34,500**	**$ 33,200**

Investigation of the accounting records reveals that the bookkeeper:

a. Recorded a $400 cash revenue transaction by debiting Accounts Receivable. The credit entry was correct.

b. Posted a $1,000 credit to Accounts Payable as $100.

c. Did not record Utilities Expense or the related Utilities Payable in the amount of $600.

d. Understated Common Stock by $400.

Prepare the corrected trial balance as of May 31, 2016, complete with a heading; journal entries are not required.

Learning Objective 5

Total Assets $177,800

E2-28 Calculating the debt ratio

Jack Harper, M.D., reported the following trial balance as of September 30, 2016:

JACK HARPER, M.D.
Trial Balance
September 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 33,000	
Accounts Receivable	8,100	
Office Supplies	2,800	
Office Equipment	29,000	
Building	100,000	
Land	23,000	
Accounts Payable		$ 2,400
Utilities Payable		400
Unearned Revenue		8,027
Notes Payable		93,000
Common Stock		110,000
Dividends	58,000	
Service Revenue		65,473
Salaries Expense	23,900	
Utilities Expense	800	
Advertising Expense	700	
Total	**$ 279,300**	**$ 279,300**

Calculate the debt ratio for Jack Harper, M.D.

> Problems Group A

Learning Objectives 3, 4

2. Cash Balance $69,060

P2-29A Journalizing transactions, posting journal entries to T-accounts, and preparing a trial balance

Vincent Yarwood practices medicine under the business title Vincent Yarwood, M.D. During July, the medical practice completed the following transactions:

Jul. 1	Yarwood contributed $68,000 cash to the business in exchange for common stock.
5	Paid monthly rent on medical equipment, $550.
9	Paid $17,000 cash to purchase land to be used in operations.
10	Purchased office supplies on account, $1,800.
19	Borrowed $24,000 from the bank for business use.
22	Paid $1,700 on account.
28	The business received a bill for advertising in the daily newspaper to be paid in August, $290.
31	Revenues earned during the month included $6,000 cash and $5,500 on account.
31	Paid employees' salaries $2,000, office rent $1,000, and utilities $550. Record as a compound entry.
31	The business received $1,260 for medical screening services to be performed next month.
31	Paid cash dividends of $7,400.

The business uses the following accounts: Cash; Accounts Receivable; Office Supplies; Land; Accounts Payable; Advertising Payable; Unearned Revenue; Notes Payable; Common Stock; Dividends; Service Revenue; Salaries Expense; Rent Expense; Utilities Expense; and Advertising Expense.

Requirements

1. Journalize each transaction. Explanations are not required.
2. Post the journal entries to the T-accounts, using transaction dates as posting references in the ledger accounts. Label the balance of each account *Bal.*
3. Prepare the trial balance of Vincent Yarwood, M.D., as of July 31, 2017.

Learning Objectives 3, 4

4. Total Debits $55,900

P2-30A Journalizing transactions, posting journal entries to T-accounts, and preparing a trial balance

Doris Stann started her practice as a design consultant on September 1, 2017. During the first month of operations, the business completed the following transactions:

Sep. 1	Received $47,000 cash and issued common stock to Stann.
4	Purchased office supplies, $700, and furniture, $1,600, on account.
6	Performed services for a law firm and received $1,400 cash.
7	Paid $20,000 cash to acquire land to be used in operations.
10	Performed services for a hotel and received its promise to pay the $900 within one week.
14	Paid for the furniture purchased on September 4 on account.
15	Paid assistant's semimonthly salary, $1,480.
17	Received cash on account, $700.
20	Prepared a design for a school on account, $700.
25	Received $2,200 cash for design services to be performed in October.
28	Received $2,600 cash for consulting with Plummer & Gordon.
29	Paid $2,400 cash for a 12-month insurance policy starting on October 1.
30	Paid assistant's semimonthly salary, $1,480.
30	Paid monthly rent expense, $500.
30	Received a bill for utilities, $400. The bill will be paid next month.
30	Paid cash dividends of $3,000.

Requirements

1. Record each transaction in the journal using the following account titles: Cash; Accounts Receivable; Office Supplies; Prepaid Insurance; Furniture; Land; Accounts Payable; Utilities Payable; Unearned Revenue; Common Stock; Dividends; Service Revenue; Salaries Expense; Rent Expense; Utilities Expense. Explanations are not required.
2. Open a T-account for each of the accounts.
3. Post the journal entries to the T-accounts, using transaction dates as posting references in the ledger accounts. Label the balance of each account *Bal*.
4. Prepare the trial balance of Doris Stann, Designer, as of September 30, 2017.

Learning Objectives 3, 4

3. Cash Balance $23,400

P2-31A Journalizing transactions, posting journal entries to four-column accounts, and preparing a trial balance

Trevor McGraw opened a law office on January 1, 2017. During the first month of operations, the business completed the following transactions:

Jan. 1	McGraw contributed $62,000 cash to the business, Trevor McGraw, Attorney. The business issued common stock to McGraw.
3	Purchased office supplies, $500, and furniture, $2,000, on account.
4	Performed legal services for a client and received $1,600 cash.
7	Purchased a building with a market value of $70,000, and land with a market value of $29,000. The business paid $35,000 cash and signed a note payable to the bank for the remaining amount.
11	Prepared legal documents for a client on account, $300.
15	Paid assistant's semimonthly salary, $1,180.
16	Paid for the office supplies purchased on January 3 on account.
18	Received $2,000 cash for helping a client sell real estate.
19	Defended a client in court and billed the client for $1,400.
25	Received a bill for utilities, $550. The bill will be paid next month.
29	Received cash on account, $700.
30	Paid $840 cash for a 12-month insurance policy starting on February 1.
30	Paid assistant's semimonthly salary, $1,180.
31	Paid monthly rent expense, $1,300.
31	Paid cash dividends of $2,900.

Requirements

1. Record each transaction in the journal, using the following account titles: Cash; Accounts Receivable; Office Supplies; Prepaid Insurance; Furniture; Building; Land; Accounts Payable; Utilities Payable; Notes Payable; Common Stock; Dividends; Service Revenue; Salaries Expense; Rent Expense; and Utilities Expense. Explanations are not required.
2. Open the following four-column accounts including account numbers: Cash, 101; Accounts Receivable, 111; Office Supplies, 121; Prepaid Insurance, 131; Furniture, 141; Building, 151; Land, 161; Accounts Payable, 201; Utilities Payable, 211; Notes Payable, 221; Common Stock, 301; Dividends, 311; Service Revenue, 411; Salaries Expense, 511; Rent Expense, 521; and Utilities Expense, 531.
3. Post the journal entries to four-column accounts in the ledger, using dates, account numbers, journal references, and posting references. Assume the journal entries were recorded on page 1 of the journal.
4. Prepare the trial balance of Trevor McGraw, Attorney, at January 31, 2017.

Learning Objectives 3, 4

3. Cash Balance $16,700

P2-32A Journalizing transactions, posting journal entries to four-column accounts, and preparing a trial balance

The trial balance of Steve Mentz, CPA, is dated March 31, 2017:

STEVE MENTZ, CPA
Trial Balance
March 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 18,000	
Accounts Receivable	9,500	
Office Supplies	1,000	
Furniture	0	
Automobile	0	
Land	26,000	
Accounts Payable		$ 5,500
Unearned Revenue		0
Common Stock		44,100
Dividends	0	
Service Revenue		10,800
Salaries Expense	5,000	
Rent Expense	900	
Total	**$ 60,400**	**$ 60,400**

During April, the business completed the following transactions:

Apr. 4	Collected $1,000 cash from a client on account.
8	Performed tax services for a client on account, $5,800.
13	Paid $1,500 on account.
14	Purchased furniture on account, $4,600.
15	Mentz contributed his personal automobile to the business in exchange for common stock. The automobile had a market value of $8,000.
18	Purchased office supplies on account, $500.
19	Received $2,900 for tax services performed on April 8.
20	Paid cash dividends of $8,000.
21	Received $5,400 cash for consulting work completed.
24	Received $1,200 cash for accounting services to be completed next month.
27	Paid office rent, $700.
28	Paid employee salary, $1,600.

Requirements

1. Record the April transactions in the journal. Use the following accounts: Cash; Accounts Receivable; Office Supplies; Furniture; Automobile; Land; Accounts Payable; Unearned Revenue; Common Stock; Dividends; Service Revenue; Salaries Expense; and Rent Expense. Include an explanation for each entry.
2. Open the four-column ledger accounts listed in the trial balance, together with their balances as of March 31. Use the following account numbers: Cash, 11; Accounts Receivable, 12; Office Supplies, 13; Furniture, 14; Automobile, 15; Land, 16; Accounts Payable, 21; Unearned Revenue, 22; Common Stock, 31; Dividends, 33; Service Revenue, 41; Salaries Expense, 51; and Rent Expense, 52.
3. Post the journal entries to four-column accounts in the ledger, using dates, account numbers, journal references, and posting references. Assume the journal entries were recorded on page 5 of the journal.
4. Prepare the trial balance of Steve Mentz, CPA, at April 30, 2017.

P2-33A Correcting errors in a trial balance

Learning Objective 4

Total Debits $115,900

The trial balance of Learn for Life Child Care does not balance.

LEARN FOR LIFE CHILD CARE
Trial Balance
August 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 8,800	
Accounts Receivable	7,100	
Office Supplies	1,200	
Prepaid Insurance	1,800	
Equipment	90,600	
Accounts Payable		$ 2,700
Notes Payable		55,000
Common Stock		58,000
Dividends	4,400	
Service Revenue		2,200
Salaries Expense	5,200	
Rent Expense	600	
Total	**$ 119,700**	**$ 117,900**

The following errors are detected:

a. Cash is understated by $1,300.

b. A $4,600 debit to Accounts Receivable was posted as a credit.

c. A $1,500 purchase of office supplies on account was neither journalized nor posted.

d. Equipment was incorrectly transferred from the ledger as $90,600. It should have been transferred as $82,000.

e. Salaries Expense is overstated by $900.

f. A $800 cash payment for advertising expense was neither journalized nor posted.

g. A $200 cash dividend was incorrectly journalized as $2,000.

h. Service Revenue was understated by $4,600.

i. A 12-month insurance policy was posted as a $900 credit to Prepaid Insurance. Cash was posted correctly.

Prepare the corrected trial balance at August 31, 2017. Journal entries are not required.

Learning Objectives 4, 5

2. Ending Retained Earnings $5,890

P2-34A Preparing financial statements from the trial balance and calculating the debt ratio

The trial balance as of July 31, 2017, for Sandra Sousa, Registered Dietician, is presented below:

SANDRA SOUSA, REGISTERED DIETICIAN
Trial Balance
July 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 33,000	
Accounts Receivable	9,500	
Office Supplies	1,500	
Prepaid Insurance	2,000	
Equipment	15,000	
Accounts Payable		$ 3,300
Unearned Revenue		2,810
Notes Payable		25,000
Common Stock		24,000
Dividends	2,600	
Service Revenue		11,840
Salaries Expense	2,300	
Rent Expense	800	
Utilities Expense	250	
Total	**$ 66,950**	**$ 66,950**

Requirements

1. Prepare the income statement for the month ended July 31, 2017.
2. Prepare the statement of retained earnings for the month ended July 31, 2017. The beginning balance of retained earnings was $0.
3. Prepare the balance sheet as of July 31, 2017.
4. Calculate the debt ratio as of July 31, 2017.

> Problems Group B

P2-35B Journalizing transactions, posting journal entries to T-accounts, and preparing a trial balance

Learning Objectives 3, 4

2. Cash Balance $70,020

Vito York practices medicine under the business title Vito York, M.D. During March, the medical practice completed the following transactions:

Mar. 1	York contributed $64,000 cash to the business in exchange for common stock.
5	Paid monthly rent on medical equipment, $630.
9	Paid $13,000 cash to purchase land to be used in operations.
10	Purchased office supplies on account, $1,800.
19	Borrowed $24,000 from the bank for business use.
22	Paid $1,200 on account.
28	The business received a bill for advertising in the daily newspaper to be paid in April, $270.
31	Revenues earned during the month included $6,600 cash and $5,800 on account.
31	Paid employees' salaries $2,700, office rent $1,500, and utilities $400. Record as a compound entry.
31	The business received $1,450 for medical screening services to be performed next month.
31	Paid cash dividends of $6,600.

The business uses the following accounts: Cash; Accounts Receivable; Office Supplies; Land; Accounts Payable; Advertising Payable; Unearned Revenue; Notes Payable; Common Stock; Dividends; Service Revenue; Salaries Expense; Rent Expense; Utilities Expense; and Advertising Expense.

Requirements

1. Journalize each transaction. Explanations are not required.
2. Post the journal entries to the T-accounts, using transaction dates as posting references in the ledger accounts. Label the balance of each account *Bal.*
3. Prepare the trial balance of Vito York, M.D., as of March 31, 2017.

Learning Objectives 3, 4

4. Total Debits $49,500

P2-36B Journalizing transactions, posting journal entries to T-accounts, and preparing a trial balance

Deb Sikes started her practice as a design consultant on November 1, 2017. During the first month of operations, the business completed the following transactions:

Nov. 1	Received $39,000 cash and issued common stock to Sikes.
4	Purchased office supplies, $900, and furniture, $1,800, on account.
6	Performed services for a law firm and received $2,000 cash.
7	Paid $24,000 cash to acquire land to be used in operations.
10	Performed services for a hotel and received its promise to pay the $1,200 within one week.
14	Paid for the furniture purchased on November 4 on account.
15	Paid assistant's semimonthly salary, $1,410.
17	Received cash on account, $1,000.
20	Prepared a design for a school on account, $900.
25	Received $2,100 cash for design services to be performed in December.
28	Received $2,800 cash for consulting with Plummer & Gordon.
29	Paid $1,080 cash for a 12-month insurance policy starting on December 1.
30	Paid assistant's semimonthly salary, $1,410.
30	Paid monthly rent expense, $800.
30	Received a bill for utilities, $600. The bill will be paid next month.
30	Paid cash dividends of $4,000.

Requirements

1. Record each transaction in the journal using the following account titles: Cash; Accounts Receivable; Office Supplies; Prepaid Insurance; Furniture; Land; Accounts Payable; Utilities Payable; Unearned Revenue; Common Stock; Dividends; Service Revenue; Salaries Expense; Rent Expense; Utilities Expense. Explanations are not required.
2. Open a T-account for each of the accounts.
3. Post the journal entries to the T-accounts, using transaction dates as posting references in the ledger accounts. Label the balance of each account *Bal.*
4. Prepare the trial balance of Deb Sikes, Designer, as of November 30, 2017.

P2-37B Journalizing transactions, posting journal entries to four-column accounts, and preparing a trial balance

Learning Objectives 3, 4

3. Service Revenue Balance $6,000

Taylor Murray opened a law office on January 1, 2017. During the first month of operations, the business completed the following transactions:

Apr. 1	Moore contributed $76,000 cash to the business, Trevor Moore, Attorney. The business issued common stock to Moore.
3	Purchased office supplies, $400, and furniture, $2,200, on account.
4	Performed legal services for a client and received $900 cash.
7	Purchased a building with a market value of $120,000, and land with a market value of $29,000. The business paid $45,000 cash and signed a note payable to the bank for the remaining amount.
11	Prepared legal documents for a client on account, $800.
15	Paid assistant's semimonthly salary, $1,230.
16	Paid for the office supplies purchased on April 3 on account.
18	Received $2,800 cash for helping a client sell real estate.
19	Defended a client in court and billed the client for $1,500.
25	Received a bill for utilities, $650. The bill will be paid next month.
28	Received cash on account, $1,700.
29	Paid $4,800 cash for a 12-month insurance policy starting on May 1.
29	Paid assistant's semimonthly salary, $1,230.
30	Paid monthly rent expense, $1,100.
30	Paid cash dividends of $2,000.

Requirements

1. Record each transaction in the journal, using the following account titles: Cash; Accounts Receivable; Office Supplies; Prepaid Insurance; Furniture; Building; Land; Accounts Payable; Utilities Payable; Notes Payable; Common Stock; Dividends; Service Revenue; Salaries Expense; Rent Expense; and Utilities Expense. Explanations are not required.
2. Open the following four-column accounts including account numbers: Cash, 101; Accounts Receivable, 111; Office Supplies, 121; Prepaid Insurance, 131; Furniture, 141; Building, 151; Land, 161; Accounts Payable, 201; Utilities Payable, 211; Notes Payable, 221; Common Stock, 301; Dividends, 311; Service Revenue, 411; Salaries Expense, 511; Rent Expense, 521; and Utilities Expense, 531.
3. Post the journal entries to four-column accounts in the ledger, using dates, account numbers, journal references, and posting references. Assume the journal entries were recorded on page 1 of the journal.
4. Prepare the trial balance of Taylor Murray, Attorney, at January 31, 2017.

Learning Objectives 3, 4

3. Cash Balance $11,000

P2-38B Journalizing transactions, posting journal entries to four-column accounts, and preparing a trial balance

The trial balance of James Howe, CPA, is dated March 31, 2017:

JAMES HOWE, CPA
Trial Balance
March 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 10,000	
Accounts Receivable	7,500	
Office Supplies	400	
Furniture	0	
Automobile	0	
Land	27,000	
Accounts Payable		$ 4,200
Unearned Revenue		0
Common Stock		33,300
Dividends	0	
Service Revenue		10,800
Salaries Expense	2,500	
Rent Expense	900	
Total	**$ 48,300**	**$ 48,300**

During April, the business completed the following transactions:

Apr. 4	Collected $2,000 cash from a client on account.
8	Performed tax services for a client on account, $5,400.
13	Paid $3,300 on account.
14	Purchased furniture on account, $4,600.
15	Howe contributed his personal automobile to the business in exchange for common stock. The automobile had a market value of $10,000.
18	Purchased office supplies on account, $1,000.
19	Received $2,700 for tax services performed on April 8.
20	Paid cash dividends of $4,000.
21	Received $3,800 cash for consulting work completed.
24	Received $1,400 cash for accounting services to be completed next month.
27	Paid office rent, $600.
28	Paid employee salary, $1,000.

Requirements

1. Record the April transactions in the journal using the following accounts: Cash; Accounts Receivable; Office Supplies; Furniture; Automobile; Land; Accounts Payable; Unearned Revenue; Common Stock; Dividends; Service Revenue; Salaries Expense; and Rent Expense. Include an explanation for each entry.
2. Open the four-column ledger accounts listed in the trial balance, together with their balances as of March 31. Use the following account numbers: Cash, 11; Accounts Receivable, 12; Office Supplies, 13; Furniture, 14; Automobile, 15; Land, 16; Accounts Payable, 21; Unearned Revenue, 22; Common Stock, 31; Dividends, 33; Service Revenue, 41; Salaries Expense, 51; and Rent Expense, 52.
3. Post the journal entries to four-column accounts in the ledger, using dates, account numbers, journal references, and posting references. Assume the journal entries were recorded on page 5 of the journal.
4. Prepare the trial balance of James Howe, CPA, at April 30, 2017.

P2-39B Correcting errors in a trial balance

Learning Objective 4

Total Debits $122,400

The trial balance of Creative Tots Child Care does not balance.

CREATIVE TOTS CHILD CARE
Trial Balance
August 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 9,060	
Accounts Receivable	6,900	
Office Supplies	700	
Prepaid Insurance	900	
Equipment	87,500	
Accounts Payable		$ 1,800
Notes Payable		46,000
Common Stock		56,000
Dividends	4,340	
Service Revenue		10,900
Salaries Expense	4,000	
Rent Expense	400	
Total	**$ 113,800**	**$ 114,700**

The following errors are detected:

a. Cash is understated by $1,000.

b. A $4,800 debit to Accounts Receivable was posted as a credit.

c. A $1,700 purchase of office supplies on account was neither journalized nor posted.

d. Equipment was incorrectly transferred from the ledger as $87,500. It should have been transferred as $80,000.

e. Salaries Expense is overstated by $800.

f. A $800 cash payment for advertising expense was neither journalized nor posted.

g. A $160 cash dividend was incorrectly journalized as $1,600.

h. Service Revenue was understated by $4,000.

i. A 12-month insurance policy was posted as a $1,300 credit to Prepaid Insurance. Cash was posted correctly.

Prepare the corrected trial balance at August 31, 2017. Journal entries are not required.

Learning Objectives 4, 5

1. Net Income $7,508

P2-40B Preparing financial statements from the trial balance and calculating the debt ratio

The trial balance as of July 31, 2017, for Sarah Silk, Registered Dietician, is presented below:

SARAH SILK, REGISTERED DIETICIAN
Trial Balance
July 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 30,000	
Accounts Receivable	9,700	
Office Supplies	2,200	
Prepaid Insurance	2,700	
Equipment	20,000	
Accounts Payable		$ 3,400
Unearned Revenue		5,192
Notes Payable		25,000
Common Stock		26,000
Dividends	2,500	
Service Revenue		9,858
Salaries Expense	1,300	
Rent Expense	800	
Utilities Expense	250	
Total	**$ 69,450**	**$ 69,450**

Requirements

1. Prepare the income statement for the month ended July 31, 2017.
2. Prepare the statement of retained earnings for the month ended July 31, 2017. The beginning balance of retained earnings was $0.
3. Prepare the balance sheet as of July 31, 2017.
4. Calculate the debt ratio as of July 31, 2017.

> Continuing Problem

P2-41 Journalizing transactions, posting to T-accounts, and preparing a trial balance

Problem P2-41 continues with the consulting business begun in Problem P1-54 in Chapter 1. Here you will account for Daniels Consulting's transactions as it is actually done in practice.

Daniels Consulting completed the following transactions during December 2016:

Dec. 2	Stockholders contributed $20,000 cash in exchange for common stock.
2	Paid monthly office rent, $2,000.
3	Paid cash for a computer, $3,600. This equipment is expected to remain in service for five years.
4	Purchased office furniture on account, $3,000. The furniture should last for five years.
5	Purchased office supplies on account, $800.
9	Performed consulting service for a client on account, $2,500.
12	Paid utilities expenses, $150.
18	Performed service for a client and received cash of $2,100.
21	Received $2,400 in advance for client service to be performed in the future.
21	Hired an administrative assistant to be paid $2,055 on the 20th day of each month. The secretary begins work immediately.
26	Paid $200 on account.
28	Collected $400 on account.
30	Cash dividends of $1,000 were paid to stockholders.

Requirements

1. Journalize the transactions, using the following accounts: Cash; Accounts Receivable; Office Supplies; Equipment; Furniture; Accounts Payable; Unearned Revenue; Common Stock; Dividends; Service Revenue; Rent Expense; and Utilities Expense. Explanations are not required.
2. Open a T-account for each of the accounts.
3. Post the journal entries to the T-accounts, and calculate account balances. Formal posting references are not required.
4. Prepare a trial balance as of December 31, 2016.
5. Prepare the income statement of Daniels Consulting for the month ended December 31, 2016.
6. Prepare the statement of retained earnings for the month ended December 31, 2016.
7. Prepare the balance sheet as of December 31, 2016.
8. Calculate the debt ratio for Daniels Consulting at December 31, 2016.

> Practice Set

P2-42 Journalizing transactions, posting to T-accounts, and preparing a trial balance

Consider the following transactional data for the first month of operations for Crystal Clear Cleaning.

Nov. 1	Stockholders contributed $35,000 and a truck, with a market value of $7,000, to the business in exchange for common stock.
2	The business paid $2,000 to Pleasant Properties for November through February rent. (Debit Prepaid Rent)
3	Paid $1,800 for a business insurance policy for the term November 1, 2017 through October 31, 2018. (Debit Prepaid Insurance)
4	Purchased cleaning supplies on account, $220.
5	Purchased on account an industrial vacuum cleaner costing $2,000. The invoice is payable November 25.
7	Paid $1,200 for a computer and printer.
9	Performed cleaning services on account in the amount of $3,800.
10	Received $300 for services rendered on November 9.
15	Paid employees, $350.
16	Received $12,000 for a 1-year contract beginning November 16 for cleaning services to be provided. Contract begins November 16, 2017, and ends November 15, 2018. (Credit Unearned Revenue)
17	Provided cleaning services and received $1,000 cash.
18	Received a utility bill for $250 with a due date of December 4, 2017. (Use Accounts Payable)
20	Borrowed $96,000 from bank with interest rate of 9% per year.
21	Received $900 on account for services performed on November 9.
25	Paid $1,000 on account for vacuum cleaner purchased on November 5.
29	Paid $500 for advertising.
30	Cash dividends of $200 were paid to stockholders.

Requirements

1. Journalize the transactions, using the following accounts: Cash; Accounts Receivable; Cleaning Supplies; Prepaid Rent; Prepaid Insurance; Equipment; Truck; Accounts Payable; Unearned Revenue; Notes Payable; Common Stock; Dividends; Service Revenue; Salaries Expense; Advertising Expense; and Utilities Expense. Explanations are not required.
2. Open a T-account for each account.
3. Post the journal entries to the T-accounts, and calculate account balances. Formal posting references are not required.
4. Prepare a trial balance as of November 30, 2017.

CRITICAL THINKING

> Decision Case 2-1

Your friend, Dean McChesney, requested that you advise him on the effects that certain transactions will have on his business, A-Plus Travel Planners. Time is short, so you cannot journalize the transactions. Instead, you must analyze the transactions without a journal. McChesney will continue the business only if he can expect to earn a monthly net income of $6,000. The business completed the following transactions during June:

a. McChesney deposited $10,000 cash in a business bank account to start the company. The company issued common stock to McChesney.

b. Paid $300 cash for office supplies.

c. Incurred advertising expense on account, $700.

d. Paid the following cash expenses: administrative assistant's salary, $1,400; office rent, $1,000.

e. Earned service revenue on account, $8,800.

f. Collected cash from customers on account, $1,200.

Requirements

1. Open the following T-accounts: Cash; Accounts Receivable; Office Supplies; Accounts Payable; Common Stock; Service Revenue; Salaries Expense; Rent Expense; and Advertising Expense.
2. Post the transactions directly to the accounts without using a journal. Record each transaction by letter. Calculate account balances.
3. Prepare a trial balance at June 30, 2016.
4. Compute the amount of net income or net loss for this first month of operations. Would you recommend that McChesney continue in business?

> Ethical Issue 2-1

Better Days Ahead, a charitable organization, has a standing agreement with First National Bank. The agreement allows Better Days Ahead to overdraw its cash balance at the bank when donations are running low. In the past, Better Days Ahead managed funds wisely and rarely used this privilege. Jacob Henson has recently become the president of Better Days. To expand operations, Henson acquired office equipment and spent large amounts on fundraising. During Henson's presidency, Better Days Ahead has maintained a negative bank balance of approximately $10,000.

What is the ethical issue in this situation, if any? State why you approve or disapprove of Henson's management of Better Days Ahead's funds.

> Fraud Case 2-1

Roy Akins was the accounting manager at Zelco, a tire manufacturer, and he played golf with Hugh Stallings, the CEO, who was something of a celebrity in the community. The CEO stood to earn a substantial bonus if Zelco increased net income by year-end. Roy was eager to get into Hugh's elite social circle; he boasted to Hugh that he knew some accounting tricks that could increase company income by simply revising a few journal entries for rental payments on storage units. At the end of the year, Roy changed the debits from "rent expense" to "prepaid rent" on several entries. Later, Hugh got his bonus, and the deviations were never discovered.

Requirements

1. How did the change in the journal entries affect the net income of the company at year-end?
2. Who gained and who lost as a result of these actions?

> Financial Statement Case 2-1

Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to the **Starbucks Corporation** Fiscal 2013 Annual Report.

Requirements

1. Calculate the debt ratio for Starbucks Corporation as of September 29, 2013.
2. How did the debt ratio for Starbucks Corporation compare to the debt ratio for **Green Mountain Coffee Roasters, Inc.**? Discuss.

> Communication Activity 2-1

In 35 words or fewer, explain the difference between a debit and a credit, and explain what the normal balance of the six account types is.

> Quick Check Answers

1. a **2.** c **3.** d **4.** d **5.** b **6.** b **7.** d **8.** b **9.** a **10.** b

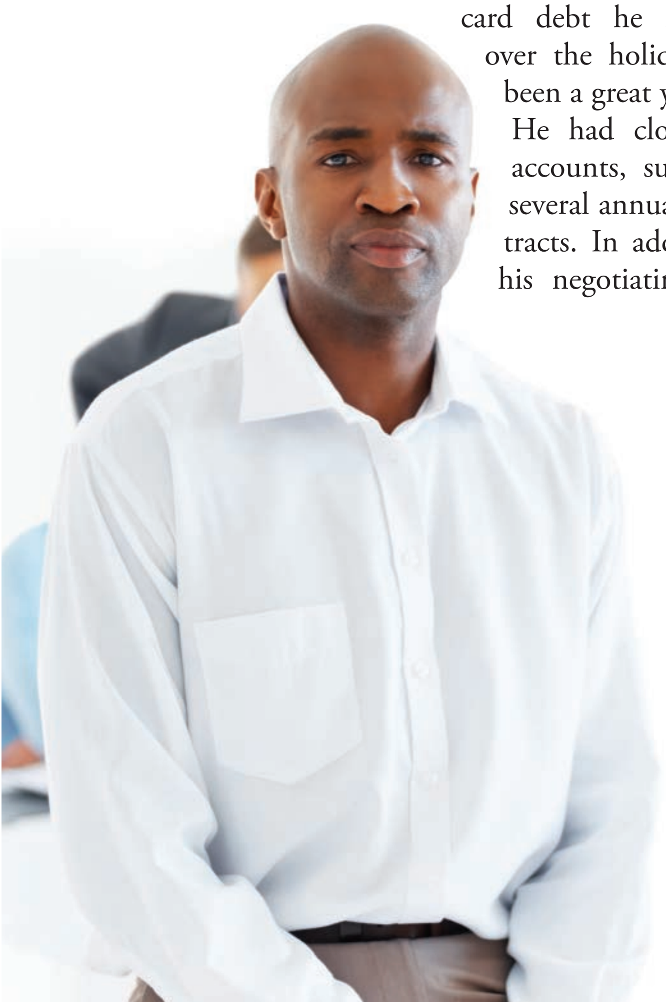
The Adjusting Process

3

Where's My Bonus?

Liam Mills was surprised when he opened his mail. He had just received his most recent quarterly bonus check from his employer, Custom Marketing, and the check was smaller than he expected. Liam worked as a sales manager and was responsible for product marketing and implementation in the southwest region of the United States. He was paid a monthly salary but also received a 3% bonus for all revenue generated from advertising services provided to customers in his geographical area. He was counting on his fourth quarter (October–December) bonus check to be large enough to pay off the credit card debt he had accumulated over the holiday break. It had been a great year-end for Liam. He had closed several open accounts, successfully signing several annual advertising contracts. In addition, because of his negotiating skills, he was able to collect half of the payments for services up front instead of waiting for his customers to pay every month. Liam expected that his bonus check would be huge because of this new business, but it wasn't.

The next day, Liam stopped by the accounting office to discuss his bonus check. He was surprised to learn that his bonus was calculated by the revenue earned by his company through December 31. Although Liam had negotiated to receive half of the payments up front, the business had not yet earned the revenue from those payments. Custom Marketing will not record revenue earned until the advertising services have been performed. Eventually Liam will see the new business reflected in his bonus check, but he'll have to wait until the revenue has been earned.



How Was Revenue Earned Calculated?

At the end of a time period (often December 31), companies are required to accurately report revenues earned and expenses incurred during that time period. In order to do this, the company reviews the account balances as of the end of the time period and determines whether any adjustments are needed. For example, CC Media Holdings, Inc., the parent company of radio giant Clear Channel Communications and Clear Channel Outdoor Holdings, an outdoor advertising agency, must determine the amount of revenue earned from open advertising contracts. These contracts can cover only a few weeks or as long as several years. Only the amount earned in the current time period is reported as revenue on the income statement. *Adjusting the books* is the process of reviewing and adjusting the account balances so that amounts on the financial statements are reported accurately. This is what we will learn in this chapter.

Chapter 3 Learning Objectives

1 Differentiate between cash basis accounting and accrual basis accounting
2 Define and apply the time period concept, revenue recognition, and matching principles
3 Explain the purpose of and journalize and post adjusting entries
4 Explain the purpose of and prepare an adjusted trial balance
5 Identify the impact of adjusting entries on the financial statements
6 Explain the purpose of a worksheet and use it to prepare adjusting entries and the adjusted trial balance
7 Understand the alternative treatments of recording deferred expenses and deferred revenues (Appendix 3A)

In Chapter 1, we introduced you to the accounting equation and the financial statements. In Chapter 2, you learned about T-accounts, debits, credits, and the trial balance. But have you captured all the transactions for a particular period? Not yet.

In this chapter, we continue our exploration of the accounting cycle by learning how to update the accounts at the end of the period. This process is called adjusting the books, and it requires special journal entries called *adjusting entries*. For example, you learn how, at the end of a particular period, you must determine how many office supplies you have used and how much you owe your employees—and make adjusting entries to account for these amounts. These are just some of the adjusting entries you need to make before you can see the complete picture of how well your company performed during a period of time.

Cash Basis Accounting
Accounting method that records revenues only when cash is received and expenses only when cash is paid.

Accrual Basis Accounting
Accounting method that records revenues when earned and expenses when incurred.

WHAT IS THE DIFFERENCE BETWEEN CASH BASIS ACCOUNTING AND ACCRUAL BASIS ACCOUNTING?

Learning Objective 1
Differentiate between cash basis accounting and accrual basis accounting

There are two ways to record transactions—cash basis accounting or accrual basis accounting.

- **Cash basis accounting** records only transactions with cash: cash receipts and cash payments. When cash is received, revenues are recorded. When cash is paid, expenses are recorded. As a result, revenues are recorded only when cash is received and expenses are recorded only when cash is paid. The cash basis of accounting is not allowed under Generally Accepted Accounting Principles (GAAP); however, small businesses will sometimes use this method. **The cash method is an easier accounting method to follow because it generally requires less knowledge of accounting concepts and principles. The cash basis accounting method also does a good job of tracking a business's cash flow.**
- **Accrual basis accounting** records the effect of each transaction as it occurs—that is, revenues are recorded when earned and expenses are recorded when incurred. Most businesses use the accrual basis as covered in this book. The accrual basis of accounting provides a better picture of a business's revenues and expenses. It records revenue only when it has been earned and expenses only when they have been incurred. Under accrual basis accounting, it is irrelevant when cash is received or paid.

If cash basis accounting is not allowed by GAAP, why would a business choose to use this method?

Example: Suppose on May 1, Smart Touch Learning paid $1,200 for insurance for the next six months ($200 per month). This prepayment represents insurance coverage for May through October. Under the cash basis method, Smart Touch Learning would record Insurance Expense of $1,200 on May 1. This is because the cash basis method records an expense when cash is paid. Alternatively, accrual basis accounting requires the company to prorate the expense. Smart Touch Learning would record a $200 expense every month from May through October. This is illustrated as follows:

	Cash basis		Accrual basis	
Cash Payment Made	May 1:	$ 1,200	May 1:	$ 1,200
Expense Recorded	May 1:	$ 1,200	May 31:	$ 200
			June 30:	200
			July 31:	200
			August 31:	200
			September 30:	200
			October 31:	200
Total Expense Recorded		$ 1,200		$ 1,200

Now let's see how the cash basis and the accrual basis methods account for revenues.

Example: Suppose on April 30, Smart Touch Learning received $600 for services to be performed for the next six months (May through October). Under the cash basis method, Smart Touch Learning would record $600 of revenue when the cash is received on April 30. The accrual basis method, though, requires the revenue to be recorded only when it is earned. Smart Touch Learning would record $100 of revenue each month for the next six months beginning in May.

	Cash basis		Accrual basis	
Cash Received	April 30:	$ 600	April 30:	$ 600
Revenue Recorded	April 30:	$ 600	May 31:	$ 100
			June 30:	100
			July 31:	100
			August 31:	100
			September 30:	100
			October 31:	100
Total Revenue Recorded		$ 600		$ 600

Notice that under both methods, cash basis and accrual basis, the total amount of revenues and expenses recorded by October 31 was the same. The major difference between a cash basis accounting system and an accrual basis accounting system is the timing of recording the revenue or expense.

Try It!

Total Pool Services earned $130,000 of service revenue during 2016. Of the $130,000 earned, the business received $105,000 in cash. The remaining amount, $25,000, was still owed by customers as of December 31. In addition, Total Pool Services incurred $85,000 of expenses during the year. As of December 31, $10,000 of the expenses still needed to be paid. In addition, Total Pool Services prepaid $5,000 cash in December 2016 for expenses incurred during the next year.

1. Determine the amount of service revenue and expenses for 2016 using a cash basis accounting system.
2. Determine the amount of service revenue and expenses for 2016 using an accrual basis accounting system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S3-1 and S3-2. MyAccountingLab

WHAT CONCEPTS AND PRINCIPLES APPLY TO ACCRUAL BASIS ACCOUNTING?

Learning Objective 2

Define and apply the time period concept, revenue recognition, and matching principles.

As we have seen, the timing and recognition of revenues and expenses are the key differences between the cash basis and accrual basis methods of accounting. These differences can be explained by understanding the time period concept and the revenue recognition and matching principles.

The Time Period Concept

Time Period Concept

Assumes that a business's activities can be sliced into small time segments and that financial statements can be prepared for specific periods, such as a month, quarter, or year.

Fiscal Year

An accounting year of any 12 consecutive months that may or may not coincide with the calendar year.

Smart Touch Learning will know with 100% certainty how well it has operated only if the company sells all of its assets, pays all of its liabilities, and gives any leftover cash to its stockholders. For obvious reasons, it is not practical to measure income this way. Because businesses need periodic reports on their affairs, the **time period concept** assumes that a business's activities can be sliced into small time segments and that financial statements can be prepared for specific periods, such as a month, quarter, or year.

The basic accounting period is one year, and most businesses prepare annual financial statements. The 12-month accounting period used for the annual financial statements is called a **fiscal year**. For most companies, the annual accounting period is the calendar year, from January 1 through December 31. Other companies use a fiscal year that ends on a date other than December 31. The year-end date is usually the low point in business activity for the year. Retailers are a notable example. For instance, Wal-Mart Stores, Inc., and J. C. Penney Company, Inc., use a fiscal year that ends around January 31 because the low point of their business activity comes about a month after the holidays.

The Revenue Recognition Principle

Revenue Recognition Principle

Requires companies to record revenue when it has been earned and determines the amount of revenue to record.

The **revenue recognition principle** tells accountants the following things:

- *When* to record revenue—that is, when to make a journal entry for revenue
- The *amount* of revenue to record

When to Record Revenue

The revenue recognition principle requires companies to record revenue when it has been earned—but not before. Revenue has been earned when the business has delivered a good

COMING SOON

The NEW Revenue Recognition Principle

On May 28, 2014, the FASB and IASB issued new guidance on accounting for revenue recognition, *Revenue Recognition–Revenue from Contracts with Customers*. Under this new guidance, the previous principle related to revenue recognition will be eliminated.

This new standard will become effective for public business entities with annual reporting periods beginning after December 15, 2016. For all other entities, the new standard will be effective for annual periods beginning after December 15, 2017.

The new revenue recognition principle will apply to most contracts with customers and states that an entity should recognize revenue in an amount that reflects the consideration that the entity expects to be entitled to in exchange for goods or services. The business will recognize revenue by applying five steps:

Step 1: Identify the contract with the customer. A contract is an agreement between two or more parties with enforceable rights and obligations.

Step 2: Identify the performance obligations in the contract. A performance obligation is a contractual promise with a customer to transfer a distinct good or service.

Step 3: Determine the transaction price. The transaction price is the amount that the entity expects to be entitled to as a result of transferring goods or services to the customer.

Step 4: Allocate the transaction price to the performance obligations in the contract. If the transaction has multiple performance obligations, the transaction price will be allocated among the different performance obligations.

Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation. The business will recognize revenue when (or as) it satisfies a performance obligation by transferring a good or service to a customer.

As this new standard will not be effective until after 2016, the revenue recognition principle discussed in this book is current through December 2016.

or service to the customer, not necessarily when the business receives the cash from the customer. The earnings process is complete when the company has done everything required by the sale agreement regardless of whether cash is received.

The Amount of Revenue to Record

Revenue is recorded for the actual selling price of the item or service transferred to the customer. Suppose that in order to obtain a new client, Smart Touch Learning performs e-learning services for the discounted price of $100. Ordinarily, the business would have charged $200 for this service. How much revenue should the business record? Smart Touch Learning charged only $100, so the business records $100 of revenue.

The Matching Principle

The **matching principle** (sometimes called the *expense recognition principle*) guides accounting for expenses and ensures the following:

- All expenses are recorded when they are incurred during the period.
- Expenses are matched against the revenues of the period.

Matching Principle
Guides accounting for expenses, ensures that all expenses are recorded when they are incurred during the period, and matches those expenses against the revenues of the period.

To match expenses against revenues means to subtract expenses incurred during one month from revenues earned during that same month. The goal is to compute an accurate net income or net loss for the time period.

There is a natural link between some expenses and revenues. For example, Smart Touch Learning pays a commission to the employee who sells the e-learning company's services. The commission expense is directly related to the e-learning company's revenue earned. Other expenses are not so easy to link to revenues. For example, Smart Touch Learning's monthly rent expense occurs regardless of the revenues earned that month. The matching principle tells us to identify those expenses with a particular period, such as a month or a year, when the related revenue occurred. The business will record rent expense each month based on the rental agreement.

Try It!

Match the accounting terminology to the definitions.

3. Time period concept

4. Revenue recognition principle

5. Matching principle

a. requires companies to record revenue when it has been earned and determines the amount of revenue to record

b. assumes that a business's activities can be sliced into small time segments and that financial statements can be prepared for specific periods

c. guides accounting for expenses, ensures that all expenses are recorded when they are incurred during the period, and matches those expenses against the revenues of the period.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S3-3 and S3-4. MyAccountingLab

WHAT ARE ADJUSTING ENTRIES, AND HOW DO WE RECORD THEM?

Learning Objective 3
Explain the purpose of and journalize and post adjusting entries

The end-of-period process begins with the trial balance, which you learned how to prepare in the previous chapter. Exhibit 3-1 is the unadjusted trial balance of Smart Touch Learning at December 31, 2016.

Exhibit 3-1 | **Unadjusted Trial Balance**

SMART TOUCH LEARNING
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 12,200	
Accounts Receivable	1,000	
Office Supplies	500	
Prepaid Rent	3,000	
Furniture	18,000	
Building	60,000	
Land	20,000	
Accounts Payable		$ 200
Utilities Payable		100
Unearned Revenue		600
Notes Payable		60,000
Common Stock		48,000
Dividends	5,000	
Service Revenue		16,500
Rent Expense	2,000	
Salaries Expense	3,600	
Utilities Expense	100	
Total	**$ 125,400**	**$ 125,400**

This *unadjusted trial balance* lists the revenues and expenses of the e-learning company for November and December. But these amounts are incomplete because they omit various revenue and expense transactions. Accrual basis accounting requires the business to review the unadjusted trial balance and determine whether any additional revenues and expenses need to be recorded. Are there revenues that Smart Touch Learning has earned that haven't been recorded yet? Are there expenses that have occurred that haven't been journalized?

For example, consider the Office Supplies account in Exhibit 3-1. Smart Touch Learning uses office supplies during the two months. This reduces the office supplies on hand (an asset) and creates an expense (Supplies Expense). It is a waste of time to record Supplies Expense every time office supplies are used. But by December 31, enough of the $500 of Office Supplies on the unadjusted trial balance (Exhibit 3-1) have probably been used that we need to adjust the Office Supplies account. This is an example of why we need to adjust some accounts at the end of the accounting period.

An **adjusting entry** is completed at the end of the accounting period and records revenues to the period in which they are earned and expenses to the period in which they occur. Adjusting entries also update the asset and liability accounts. Adjustments are needed to properly measure several items such as:

Adjusting Entry
An entry made at the end of the accounting period that is used to record revenues to the period in which they are earned and expenses to the period in which they occur.

1. Net income (loss) on the income statement
2. Assets and liabilities on the balance sheet

There are two basic categories of adjusting entries: *deferrals* and *accruals*. In a deferral adjustment, the cash payment occurs before an expense is incurred or the cash receipt occurs before the revenue is earned. Deferrals defer the recognition of revenue or expense to a date after the cash is received or paid. Accrual adjustments are the opposite. An accrual records an expense before the cash is paid, or it records the revenue before the cash is received.

The two basic categories of adjusting entries can be further separated into four types:

1. Deferred expenses (deferral)
2. Deferred revenues (deferral)
3. Accrued expenses (accrual)
4. Accrued revenues (accrual)

The focus of this chapter is on learning how to account for these four types of adjusting entries.

Deferred Expenses

Deferred expenses, also called prepaid expenses, are advance payments of future expenses. They are deferrals because the expense is not recognized at the time of payment but deferred until they are used up. Such payments are considered assets rather than expenses until they are used up. When the prepayment is used up, the used portion of the asset becomes an expense via an adjusting entry.

Deferred Expense
An asset created when a business makes advance payments of future expenses.

Prepaid Rent

Remember Transaction 10 in Chapter 2? Smart Touch Learning prepaid three months' office rent of $3,000 ($1,000 per month × 3 months) on December 1, 2016. The entry to record the payment was as follows:

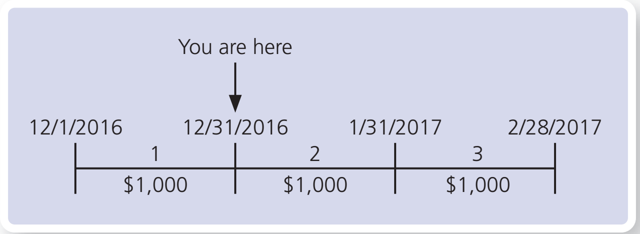
Date	Accounts and Explanation	Debit	Credit
Dec. 1	Prepaid Rent	3,000	
	Cash		3,000
	Paid rent in advance.		

$$\left.\begin{array}{c}\underline{A\uparrow\downarrow}\\ \text{Prepaid Rent}\uparrow\\ \text{Cash}\downarrow\end{array}\right\} = \left\{\begin{array}{ccc}\underline{L} & + & \underline{E}\\ & & \\ & & \end{array}\right.$$

After posting, Prepaid Rent has a $3,000 debit balance.

Prepaid Rent			
Dec. 1	3,000		

Throughout December, Prepaid Rent maintains this balance. But $3,000 is *not* the amount of Prepaid Rent for the balance sheet at December 31. Why?



As of December 31, Prepaid Rent should be decreased for the amount that has been used up. The used-up portion is one month of the three months prepaid, or one-third of the prepayment. Recall that an asset that has expired is an *expense*. The adjusting entry transfers $1,000 ($3,000 × 1/3) from Prepaid Rent to Rent Expense. The adjusting entry is as follows:

A↓		**L**	+	**E↓**
Prepaid Rent↓	=			Rent Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Rent Expense	1,000	
	Prepaid Rent		1,000
	To record rent expense.		

After posting, Prepaid Rent and Rent Expense show correct ending balances:

Prepaid Rent			
Dec. 1	3,000	1,000	Dec. 31
Bal.	2,000		

Rent Expense			
Nov. 15	2,000		
Dec. 31	1,000		
Bal.	3,000		

Prepaid Rent is an example of an asset that was overstated prior to journalizing and posting the adjusting entry. Notice that the ending balance in Prepaid Rent is now $2,000. Because Prepaid Rent is an asset account for Smart Touch Learning, it should contain only two more months of rent on December 31 (for January and February). So we have $1,000 rent per month times two months equals the $2,000 Prepaid Rent balance.

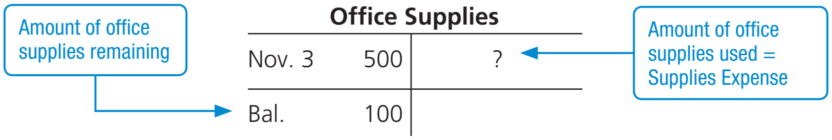
If Smart Touch Learning had prepaid insurance, the same type of analysis would apply to the prepayment of three months of insurance. The only difference is in the account titles. Prepaid Insurance would be used instead of Prepaid Rent, and Insurance Expense would be used instead of Rent Expense.

Office Supplies

Office supplies are also accounted for as prepaid expenses. Let's look at another example. On November 3, Smart Touch Learning purchased $500 of office supplies on account.

The December 31 unadjusted trial balance, therefore, still lists Office Supplies with a $500 debit balance. But Smart Touch Learning's December 31 balance sheet should *not* report office supplies of $500. Why not?

During November and December, the e-learning company used office supplies to conduct business. The cost of the supplies used becomes *Supplies Expense*. To measure Supplies Expense, the business first counts the office supplies on hand at the end of December. This is the amount of the asset still owned by the business. Assume that office supplies costing $100 remain on December 31. Then the business uses the Office Supplies T-account to determine the value of the supplies that were used:

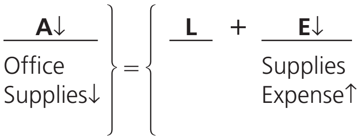


So, we can solve for the office supplies used as follows:

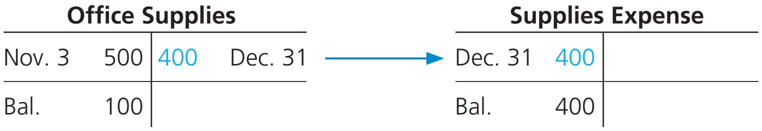
Office Supplies Balance before Adjustment − Office Supplies Used = Office Supplies on Hand
$500 − Office Supplies Used = $100
Office Supplies Used = $400

The December 31 adjusting entry updates Office Supplies and records Supplies Expense for November and December as follows:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Supplies Expense	400	
	Office Supplies		400
	To record office supplies used.		



After posting the adjusting entry, the December 31 balance of Office Supplies is correctly reflected as $100 and the Supplies Expense is correctly reflected as $400.



The Office Supplies account then enters January with a $100 balance. If the adjusting entry for Office Supplies had not been recorded, the asset would have been overstated and Supplies Expense would have been understated. In making the adjusting entry, the correct balance of Office Supplies, $100, is now reported on the balance sheet as of December 31 and the income statement is correctly reporting an expense of $400.

Depreciation

Plant assets are long-lived, tangible assets used in the operation of a business. Examples include land, buildings, equipment, furniture, and automobiles. As a business uses these assets, their value and usefulness decline. The decline in usefulness of a plant asset is an expense, and accountants systematically spread the asset's cost over its useful life. The allocation of a plant

Plant Asset
Long-lived, tangible asset, such as land, buildings, and equipment, used in the operation of a business.

Depreciation
The process by which businesses spread the allocation of a plant asset's cost over its useful life.

asset's cost over its useful life is called **depreciation**. For example, a business might pay cash for an automobile when purchased, but the automobile will last for years, so depreciation allocates the cost spent on the car over the time the business uses the car. All plant assets are depreciated, with the exception of land. We record no depreciation for land because, unlike buildings and equipment, it does not have a definitive or clearly estimable useful life, so it is difficult to allocate the cost of land.

Similarity to Prepaid Expenses The concept of accounting for plant assets is similar to that of prepaid expenses. The major difference is the length of time it takes for the asset to be used up. Prepaid expenses usually expire within a year, but plant assets remain useful for several years. As a business uses its plant assets, an adjusting entry is required to allocate the assets' costs. The adjusting entry records the cost allocation to an expense account called Depreciation Expense.

Let's review an example for Smart Touch Learning. On December 2, the business received a contribution of furniture with a market value of $18,000 from Sheena Bright. In exchange, Smart Touch Learning issued shares of stock to Bright and made the following journal entry:

A↑ = **L** + **E↑**
Furniture↑ = Common Stock↑

Date	Accounts and Explanation	Debit	Credit
Dec. 2	Furniture	18,000	
	Common Stock		18,000
	Contribution of furniture in exchange for common stock.		

After posting, the Furniture account has an $18,000 balance:

Furniture

Dec. 2	18,000	

Smart Touch Learning believes the furniture will remain useful for five years, and at the end of five years, Smart Touch Learning believes the furniture will be worthless. The expected value of a depreciable asset at the end of its useful life is called the **residual value**. Smart Touch Learning will use the straight-line method to compute the amount of depreciation. The **straight-line method** allocates an equal amount of depreciation each year and is calculated as:

Residual Value
The expected value of a depreciable asset at the end of its useful life.

Straight-Line Method
A depreciation method that allocates an equal amount of depreciation each year. (Cost − Residual value) / Useful life.

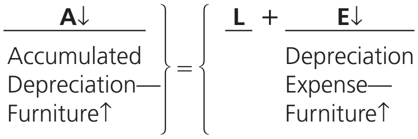
Straight-line depreciation = (Cost − Residual value) / Useful life

Smart Touch Learning will calculate the depreciation of the furniture for the month of December as:

Straight-line depreciation = (Cost − Residual value) / Useful life
= ($18,000 − $0) / 5 years
= $3,600 per year / 12 months = $300 per month

Depreciation expense for December is recorded by the following adjusting entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Depreciation Expense—Furniture	300	
	Accumulated Depreciation—Furniture		300
	To record depreciation on furniture.		

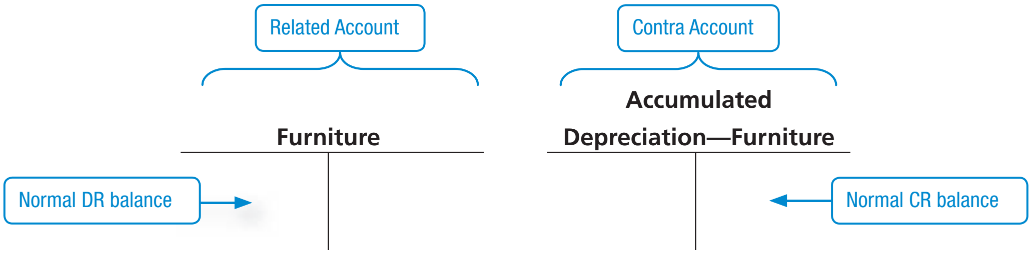


The Accumulated Depreciation Account **Notice that in the above adjusting entry for depreciation, we credited Accumulated Depreciation—Furniture and *not* the asset account Furniture. Why? We need to keep the original cost of the furniture separate from the accumulated depreciation because of the cost principle. Managers can then refer to the Furniture account to see how much the asset originally cost.** This information may help decide how much to sell the asset for in the future or how much to pay for new furniture. The **Accumulated Depreciation** account is the sum of all depreciation expense recorded for the depreciable asset to date. Accumulated Depreciation will increase (accumulate) over time.

Accumulated Depreciation is a contra asset, which means that it is an asset account with a normal credit balance. Contra means opposite. A **contra account** has two main characteristics:

- A contra account is paired with and is listed immediately after its related account in the chart of accounts and associated financial statement.
- A contra account's normal balance (debit or credit) is the opposite of the normal balance of the related account.

For example, Accumulated Depreciation—Furniture is the contra account that follows the Furniture account on the balance sheet. The Furniture account has a normal debit balance, so Accumulated Depreciation—Furniture, a contra asset, has a normal credit balance.



A business may have a separate Accumulated Depreciation account for each depreciable asset. Because Smart Touch Learning has both a Building and a Furniture account, it also has these two accounts: Accumulated Depreciation—Building, and Accumulated Depreciation—Furniture. However, small companies often have only one Accumulated Depreciation account for all of their depreciable assets.

When recording depreciation, why don't we record a credit to the Furniture account?

Accumulated Depreciation
The sum of all the depreciation expense recorded to date for a depreciable asset.

Contra Account
An account that is paired with, and is listed immediately after, its related account in the chart of accounts and associated financial statement and whose normal balance is the opposite of the normal balance of the related account.

After posting the depreciation, the accounts appear as follows:

Furniture

Dec. 2	18,000		

Accumulated Depreciation—Furniture

		300	Dec. 31

Depreciation Expense—Furniture

Dec. 31	300		

The Accumulated Depreciation account accumulates the depreciation expense. This means that next month an additional $300 will be added to the Accumulated Depreciation—Furniture account creating a balance of $600, representing two months of depreciation. At the end of three months, the Accumulated Depreciation—Furniture account will have a balance of $900 ($300 per month x 3 months).

Book Value
A depreciable asset's cost minus accumulated depreciation.

Book Value The balance sheet reports both Furniture and Accumulated Depreciation—Furniture. Because it is a contra account, Accumulated Depreciation—Furniture is subtracted from Furniture. The resulting net amount (cost minus accumulated depreciation) of a plant asset is called its **book value**. The book value represents the cost invested in the asset that the business has not yet expensed. For Smart Touch Learning's furniture, the book value on December 31 is as follows:

Book value of furniture:	
Furniture	$ 18,000
Less: Accumulated Depreciation—Furniture	(300)
Book value of furniture	$ 17,700

Depreciation on the building purchased on December 1 would be recorded in a similar manner. Suppose that the monthly depreciation is $250. The following adjusting entry would record depreciation for December:

A↓	=	**L**	+	**E↓**
Accumulated Depreciation—Building↑				Depreciation Expense—Building↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Depreciation Expense—Building	250	
	Accumulated Depreciation—Building		250
	To record depreciation on building.		

Remember, an increase in a contra asset, such as Accumulated Depreciation, decreases total assets. This is because a contra asset has a credit balance and credits decrease assets.

Had Smart Touch Learning not recorded the adjusting entries for depreciation on the furniture and building, plant assets would have been overstated and expenses would have been understated. After recording the adjusting entries, plant assets are reported at the correct net amount, as shown on the December 31 partial balance sheet in Exhibit 3-2.

Exhibit 3-2 **Plant Assets on the Balance Sheet of Smart Touch Learning**

SMART TOUCH LEARNING
Balance Sheet (Partial)
December 31, 2016

Plant Assets:		
Furniture	$ 18,000	
Less: Accumulated Depreciation—Furniture	(300)	$ 17,700
Building	60,000	
Less: Accumulated Depreciation—Building	(250)	59,750
Land		20,000
Plant Assets, Net		**$ 97,450**

Deferred Revenues

Remember, deferred (or unearned) revenues occur when the company receives cash before it does the work or delivers a product to earn that cash. The company owes a product or a service to the customer, or it owes the customer his or her money back. Only after completing the job or delivering the product does the business *earn* the revenue. Because of this delay, unearned revenue is a liability and is also called **deferred revenue**. The revenue associated with the work or product is not recognized when the cash is received but is instead deferred until it is earned.

Deferred Revenue
A liability created when a business collects cash from customers in advance of completing a service or delivering a product.

Suppose, for example, a law firm engages Smart Touch Learning to provide e-learning services for the next 30 days, agreeing to pay $600 in advance. Smart Touch Learning collected the amount on December 21 and recorded the following entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 21	Cash	600	
	Unearned Revenue		600
	Collected cash for future services.		

A↑		L↑	+	E
Cash↑	=	Unearned Revenue↑		

The liability account, Unearned Revenue, now shows that Smart Touch Learning owes $600 in services.

Unearned Revenue

	600 Dec. 21

During the last 10 days of the month—December 22 through December 31—Smart Touch Learning will *earn* approximately one-third (10 days divided by 30 days) of the $600, or $200. Therefore, Smart Touch Learning makes the following adjusting entry to record earning $200 of revenue:

A	=	**L↓**	+	**E↑**
		Unearned Revenue↓		Service Revenue↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Unearned Revenue	200	
	Service Revenue		200
	To record service revenue earned that was collected in advance.		

This adjusting entry shifts $200 from the liability account to the revenue account. Service Revenue increases by $200, and Unearned Revenue decreases by $200. Now both accounts are up to date at December 31:

Unearned Revenue

Dec. 31	200	600	Dec. 21
		400	Bal.

Service Revenue

		5,500	Nov. 8
		3,000	Nov. 10
		8,000	Dec. 28
		200	Dec. 31
		16,700	Bal.

Had the adjusting entry not been made, the liability, Unearned Revenue, would be overstated and Service Revenue would be understated.

Accrued Expenses

Accrued Expense
An expense that the business has incurred but has not yet paid.

Businesses often incur expenses before paying for them. The term **accrued expense** refers to an expense of this type. An accrued expense hasn't been paid for yet. Consider an employee's salary. Salaries Expense grows as the employee works, so the expense is said to *accrue*. Another accrued expense is interest expense on a note payable. Interest accrues as time passes on the note. An accrued expense always creates an accrued liability.

Corporations do not make daily or weekly journal entries to accrue expenses. Instead, they wait until the end of the accounting period. They make an adjusting entry to bring each expense (and the related liability) up to date for the financial statements.

Accrued Salaries Expense

Smart Touch Learning pays its employee a monthly salary of $2,400—half on the 15th and half on the first day of the next month. On the next page is a calendar for December and the first week in January with the two pay days circled.

December 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				Dec 1	2	3
4	5	6	7	8	9	10
11	12	13	14	15 Pay Day	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
Jan 1 Pay Day	2	3	4	5	6	7

During December, the company paid the first half-month salary on Thursday, December 15, and made this entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 15	Salaries Expense	1,200	
	Cash		1,200
	Paid salaries.		

A↓	=	L	+	E↓
Cash↓				Salaries Expense↑

The December 15 entry records only the first half of December's salaries expense. The second payment of $1,200 will occur on January 1; however, the expense was incurred in December, so the expense must be recorded in December. On December 31, Smart Touch Learning makes the following adjusting entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Salaries Expense	1,200	
	Salaries Payable		1,200
	To accrue salaries expense.		

A	=	L↑	+	E↓
		Salaries Payable↑		Salaries Expense↑

After posting, both Salaries Expense and Salaries Payable are up to date:

Salaries Payable

	1,200	Dec. 31
	1,200	Bal.

Salaries Expense

Nov. 15	1,200	
Dec. 1	1,200	
Dec. 15	1,200	
Dec. 31	1,200	
Bal.	4,800	

Salaries Expense shows a full two months' salary, and Salaries Payable shows the liability owed at December 31. This is an example of a liability that was understated before the adjusting entry was made. It also is an example of the matching principle: We are recording December's Salaries Expense in December so it will be reported on the same income statement as December's revenues.

Future Payment of Accrued Salaries Expense The adjusting entry at December 31 creates a liability that will eventually be paid. In this case, Smart Touch Learning will pay its employee the second half of December's wages on January 1. Because the expense has already been recorded, Smart Touch Learning will not record the expense again. To do so would record the expense twice, thus overstating the expense account. Instead, the business will decrease the amount of the liability, Salaries Payable, with a debit and record the cash payment. On January 1, Smart Touch Learning would record the following journal entry:

A↓		L↓	+	E
Cash↓	=	Salaries Payable↓		

Date	Accounts and Explanation	Debit	Credit
Jan. 1	Salaries Payable	1,200	
	Cash		1,200
	To record payment of accrued expense.		

Don't confuse this entry with an adjusting entry. Adjusting entries are recorded only at the end of the accounting period and are used to record either revenue earned or expenses incurred. This entry is a journal entry. It is simply recording an everyday business transaction—the payment of salaries previously accrued. In this example, the amount paid for salaries was equal to the amount of the liability in the adjusting entry. Sometimes, however, the amount paid might be different than the liability in the adjusting entry. For example, assume that instead of making a payment for salaries on January 1, Smart Touch Learning doesn't make the payment until January 15 and pays a full month's salary. By delaying the payment, Smart Touch Learning incurs additional days of salaries expense. The journal entry to record the payment on January 15 will not only decrease the payable recorded in the adjusting entry but will also record any additional expense incurred.

Accrued Interest Expense

Borrowing money creates an additional liability for a Note Payable. Remember the purchase of the building on December 1, 2016? Smart Touch Learning purchased a $60,000 building in exchange for a loan. Smart Touch Learning signed a one-year loan and recorded the following entry using the Notes Payable account:

A↑		L↑	+	E
Building↑	=	Notes Payable↑		

Date	Accounts and Explanation	Debit	Credit
Dec. 1	Building	60,000	
	Notes Payable		60,000
	Purchase of building with note.		

ETHICS

When should accrued expenses be recorded?

Evan is in the process of recording the adjusting entries for Green Landscaping Services. Bob Green, owner and manager, has asked Evan to record all of the adjusting entries except for accrued expenses. Bob has a meeting with the banker on Monday to apply for a business loan. Bob knows that the banker will review his balance sheet and income statement. Bob is concerned that by recording the accrued expenses, the business's liabilities will be significantly higher on the balance sheet and a net loss will be reported on the income statement (due to higher expenses). Bob has instructed Evan to delay recording the accrued expenses until after his meeting with the banker. What should Evan do?

Solution

Failing to record the adjusting entries for accrued expenses violates the matching principle. Recording the expenses now (before Monday) accurately matches the occurrence of the expenses with the revenues that were created during that period. If Evan does not record the adjusting entries, the financial statements will not accurately represent the financial position or operating performance of the business. The banker could be tricked into lending the company money. Then, if the business could not repay the loan, the bank would lose—all because the banker relied on incorrect accounting information supplied by the company.

Interest on this note is payable one year later, on December 1, 2017. Although the company won't make the interest payment for a year, the company must record the amount of interest expense that has been incurred by December 31, 2016. The company will make an adjusting entry to record interest expense for one month (December 1–December 31). Assume one month's interest expense on this note is $100. The December 31 adjusting entry to accrue interest expense is as follows:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Interest Expense	100	
	Interest Payable		100
	To accrue interest expense.		

$$A \left.\vphantom{\begin{array}{c}1\\1\\1\end{array}}\right\} = \left\{\begin{array}{ccc} L\uparrow & + & E\downarrow \\ \text{Interest} & & \text{Interest} \\ \text{Payable}\uparrow & & \text{Expense}\uparrow \end{array}\right.$$

Notice that the adjusting entry records a credit to the liability, Interest Payable. This is because the interest payment will not be made until next year; therefore, Smart Touch Learning owes interest to the bank. Had the adjusting entry not been recorded, liabilities and expenses would have been understated. After posting, Interest Expense and Interest Payable now have the following correct balances:

Interest Payable

	100 Dec. 31
	100 Bal.

Interest Expense

Dec. 31 100	
Bal. 100	

Accrued Revenues

As we have just seen, expenses can occur before a company makes a cash payment for them, which creates an accrued expense. Similarly, businesses can earn revenue before they receive the cash. This creates an **accrued revenue**, which is a revenue that has been earned but for which the cash has not yet been collected.

Assume that Smart Touch Learning is hired on December 15 to perform e-learning services, beginning on December 16. Under this agreement, the business will earn $1,600

Accrued Revenue
A revenue that has been earned but for which the cash has not yet been collected.

monthly and receive payment on January 15. At the date of hiring, Smart Touch Learning does not record a journal entry because revenue has not yet been earned. During December, it will earn half a month's fee, $800, for work December 16 through December 31. On December 31, Smart Touch Learning makes the following adjusting entry to record the revenue earned December 16 through December 31:

A↑		L	+	E↑
Accounts Receivable↑	=			Service Revenue↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Accounts Receivable	800	
	Service Revenue		800
	To accrue service revenue.		

The adjusting entry records the earned revenue and brings the balance of the Service Revenue account to $17,500. In addition, the adjusting entry records an additional $800 account receivable. Smart Touch Learning did not record cash because the business has not yet received payment on the services provided. The cash will not be received until January 15. Smart Touch Learning's account balances after posting the adjusting entry are:

Accounts Receivable

Nov. 10	3,000	2,000	Nov. 22
Dec. 31	800		
Bal.	1,800		

Service Revenue

		5,500	Nov. 8
		3,000	Nov. 10
		8,000	Dec. 28
		200	Dec. 31
		800	Dec. 31
		17,500	Bal.

Without the adjustment, Smart Touch Learning's financial statements would understate both an asset, Accounts Receivable, and a revenue, Service Revenue.

Future Receipt of Accrued Revenues The adjusting entry on December 31 records revenue earned for half a month and also creates an accounts receivable. When Smart Touch Learning receives the payment on January 15, the business will record the following entry:

A↑		L	+	E↑
Cash↑ Accounts Receivable↓	=			Service Revenue↑

Revenue for Jan. 1–Jan. 15

Date	Accounts and Explanation	Debit	Credit
Jan. 15	Cash	1,600	
	Service Revenue		800
	Accounts Receivable		800
	Performed services and received cash.		

Accounts Receivable created from the adjusting entry.

Notice that on January 15, Smart Touch Learning records revenue only for the remaining half of the month (January 1–January 15). Smart Touch Learning recognizes that $800 of revenue was already recorded in December. The entry on January 15 removes the accounts receivable and records the remaining revenue. If the business had incorrectly recorded $1,600 of Service Revenue on January 15, the revenue would have been overstated in January.

Exhibit 3-3 summarizes the adjusting entries for deferrals and accruals.

Exhibit 3-3 Deferral and Accrual Adjustments

ORIGINAL ENTRY

ADJUSTING ENTRY

DEFERRALS—Cash receipt or Cash payment occurs first.

Prepaid Expenses

Prepaid Rent	XXX	
Cash		XXX
Pay for rent in advance and record an asset first.		

Rent Expense	XXX	
Prepaid Rent		XXX
Adjust for rent used later.		

Depreciation

Furniture	XXX	
Cash		XXX
Pay for furniture in advance and record an asset first.		

Depreciation Expense—Furniture	XXX	
Accumulated Depreciation—Furniture		XXX
Adjust for depreciation (use) of asset later.		

Unearned Revenues

Cash	XXX	
Unearned Revenue		XXX
Receive cash in advance and record a liability first.		

Unearned Revenue	XXX	
Service Revenue		XXX
Adjust for revenue earned later.		

ACCRUALS—Cash receipt or Cash payment occurs later.

Accrued Expenses

Salaries Expense	XXX	
Salaries Payable		XXX
Accrual for expense incurred first.		

Accrued Revenues

Accounts Receivable	XXX	
Service Revenue		XXX
Accrual for revenue earned first.		

Two rules to remember about adjusting entries:

1. Adjusting entries never involve the Cash account.
2. Adjusting entries either
   a. Increase a revenue account (credit revenue) or
   b. Increase an expense account (debit expense).

The adjusting entries and account balances after posting for Smart Touch Learning at December 31 are shown in Exhibit 3-4.

- Panel A gives the data for each adjustment.
- Panel B shows the adjusting entries.
- Panel C shows the T-accounts and balances after posting.

Exhibit 3-4 **Journalizing and Posting the Adjusting Entries of Smart Touch Learning**

Panel A: Information for Adjustments

a. Prepaid rent expired, $1,000.
b. Supplies used, $400.
c. Depreciation on furniture, $300.
d. Depreciation on building, $250.
e. Service revenue that was collected in advance and now has been earned, $200.
f. Accrued salaries expense, $1,200.
g. Accrued interest on note, $100.
h. Accrued service revenue, $800.

Panel B: Adjusting Entries

Date	Accounts and Explanation	Debit	Credit
(a) Dec. 31	Rent Expense	1,000	
	Prepaid Rent		1,000
	To record rent expense.		
(b) 31	Supplies Expense	400	
	Office Supplies		400
	To record office supplies used.		
(c) 31	Depreciation Expense—Furniture	300	
	Accumulated Depreciation—Furniture		300
	To record depreciation on furniture.		
(d) 31	Depreciation Expense—Building	250	
	Accumulated Depreciation—Building		250
	To record depreciation on building.		
(e) 31	Unearned Revenue	200	
	Service Revenue		200
	To record service revenue earned that was collected in advance.		
(f) 31	Salaries Expense	1,200	
	Salaries Payable		1,200
	To accrue salaries expense.		
(g) 31	Interest Expense	100	
	Interest Payable		100
	To accrue interest expense.		
(h) 31	Accounts Receivable	800	
	Service Revenue		800
	To accrue service revenue.		

Panel C: Account Balances After Posting

ASSETS = **LIABILITIES** + **EQUITY**

Contributed Capital + **Retained Earnings**

Cash = **Accounts Payable** + **Common Stock** − **Dividends** + **Service Revenue** − **Rent Expense**

Cash

Nov. 1	30,000	20,000	Nov. 2
Nov. 8	5,500	3,200	Nov. 15
Nov. 22	2,000	300	Nov. 21
Dec. 21	600	5,000	Nov. 25
Dec. 28	8,000	3,000	Dec. 1
		1,200	Dec. 1
		1,200	Dec. 15
Bal.	12,200		

Accounts Receivable

Nov. 10	3,000	2,000	Nov. 22
Dec. 31	800		
Bal.	1,800		

Office Supplies

Nov. 3	500	400	Dec. 31
Bal.	100		

Prepaid Rent

Dec. 1	3,000	1,000	Dec. 31
Bal.	2,000		

Furniture

Dec. 2	18,000		
Bal.	18,000		

Accumulated Depreciation—Furniture

		300	Dec. 31
		300	Bal.

Building

Dec. 1	60,000		
Bal.	60,000		

Accumulated Depreciation—Building

		250	Dec. 31
		250	Bal.

Land

Nov. 2	20,000		
Bal.	20,000		

Accounts Payable

Nov. 21	300	500	Nov. 3
		200	Bal.

Utilities Payable

		100	Dec. 15
		100	Bal.

Salaries Payable

		1,200	Dec. 31
		1,200	Bal.

Interest Payable

		100	Dec. 31
		100	Bal.

Unearned Revenue

Dec. 31	200	600	Dec. 21
		400	Bal.

Notes Payable

		60,000	Dec. 1
		60,000	Bal.

Common Stock

		30,000	Nov. 1
		18,000	Dec. 2
		48,000	Bal.

Dividends

Nov. 25	5,000		
Bal.	5,000		

Service Revenue

		5,500	Nov. 8
		3,000	Nov. 10
		8,000	Dec. 28
		200	Dec. 31
		800	Dec. 31
		17,500	Bal.

Rent Expense

Nov. 15	2,000		
Dec. 31	1,000		
Bal.	3,000		

Salaries Expense

Nov. 15	1,200		
Dec. 1	1,200		
Dec. 15	1,200		
Dec. 31	1,200		
Bal.	4,800		

Supplies Expense

Dec. 31	400		
Bal.	400		

Utilities Expense

Dec. 15	100		
Bal.	100		

Depreciation Expense—Furniture

Dec. 31	300		
Bal.	300		

Depreciation Expense—Building

Dec. 31	250		
Bal.	250		

Interest Expense

Dec. 31	100		
Bal.	100		

$113,550 = **$62,000** + **$51,550**

Try It!

Startech Surveillance Services had the following adjustments as of the end of the year:

- **a.** Equipment depreciation was $1,500.
- **b.** $700 of advertising expense was incurred but not paid. (Use Advertising Payable.)
- **c.** Office Supplies on hand at the end of the year totaled $250. The beginning balance of Office Supplies was $600.
- **d.** $1,200 of rent revenue was earned but not recorded or received.
- **e.** Unearned revenue of $3,000 had been earned.

6. For each situation, indicate which category of adjustment (deferral or accrual) is described.
7. Journalize the adjusting entry needed.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S3-5 through S3-12. MyAccountingLab

WHAT IS THE PURPOSE OF THE ADJUSTED TRIAL BALANCE, AND HOW DO WE PREPARE IT?

Learning Objective 4
Explain the purpose of and prepare an adjusted trial balance

Adjusted Trial Balance
A list of all the accounts with their adjusted balances.

This chapter began with the *unadjusted* trial balance. After the adjustments have been journalized and posted, the account balances are updated and an **adjusted trial balance** can be prepared by listing all the accounts with their adjusted balances. Remember, the purpose of a trial balance is to ensure that total debits equal total credits. Even if the trial balance balances, it does not guarantee that a mistake has not been made. For example, an adjusting entry could have been recorded for the incorrect amount or could have been omitted entirely. The equality of the trial balance ensures only that each posted transaction had an equal debit and credit amount.

The adjusted trial balance for Smart Touch Learning is shown in Exhibit 3-5.

Exhibit 3-5 **Adjusted Trial Balance**

SMART TOUCH LEARNING
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 12,200	
Accounts Receivable	1,800	
Office Supplies	100	
Prepaid Rent	2,000	
Furniture	18,000	
Accumulated Depreciation—Furniture		$ 300
Building	60,000	
Accumulated Depreciation—Building		250
Land	20,000	
Accounts Payable		200
Utilities Payable		100
Salaries Payable		1,200
Interest Payable		100
Unearned Revenue		400
Notes Payable		60,000
Common Stock		48,000
Dividends	5,000	
Service Revenue		17,500
Rent Expense	3,000	
Salaries Expense	4,800	
Supplies Expense	400	
Utilities Expense	100	
Depreciation Expense—Furniture	300	
Depreciation Expense—Building	250	
Interest Expense	100	
Total	**$ 128,050**	**$ 128,050**

Try It!

8. Hooten Carpentry had the following accounts and account balances after adjusting entries. Assume all accounts have normal balances. Prepare the adjusted trial balance for Hooten Carpentry as of December 31, 2016.

Cash	$ 4,025	Common Stock	$?
Land	5,000	Accounts Receivable	660
Utilities Expense	400	Office Supplies	120
Accounts Payable	225	Utilities Payable	210
Accumulated Depreciation—Equipment	1,000	Service Revenue	12,000
Salaries Expense	550	Unearned Revenue	300
Supplies Expense	80	Depreciation Expense—Equipment	800
Equipment	10,000	Dividends	500

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S3-13. MyAccountingLab

WHAT IS THE IMPACT OF ADJUSTING ENTRIES ON THE FINANCIAL STATEMENTS?

Learning Objective 5

Identify the impact of adjusting entries on the financial statements

The adjusted trial balance is used to prepare the financial statements. If adjusting entries are not recorded, the ledger accounts will not reflect the correct balances and the adjusted trial balance will be incorrect. Remember, adjusting entries are completed to ensure that all revenues and expenses for the accounting period examined have been recorded. In addition, adjusting entries update the balance sheet accounts so that all accounts are properly valued. Exhibit 3-6 summarizes the impact on the financial statements had the adjusting entries not been recorded.

Exhibit 3-6 | **Impact of Adjusting Entries on Financial Statements**

Type of Adjusting Entry	Description	Adjusting Entry	Impact on Financial Statement if Adjusting Entries Are Not Made
Deferred Expenses	Advance cash payments of future expenses.	Expense DR Asset* CR	Income Statement: expenses understated net income overstated Balance Sheet: assets overstated equity overstated
Deferred Revenues	Advance cash receipts of future revenues.	Liability DR Revenue CR	Income Statement: revenues understated net income understated Balance Sheet: liabilities overstated equity understated
Accrued Expenses	An expense that has been incurred but not paid.	Expense DR Liability CR	Income Statement: expenses understated net income overstated Balance Sheet: liabilities understated equity overstated
Accrued Revenues	A revenue that has been earned but cash has not yet been collected.	Asset DR Revenue CR	Income Statement: revenues understated net income understated Balance Sheet: assets understated equity understated

*If recording depreciation: the contra asset, Accumulated Depreciation, is credited.

Try It!

9. Identify the impact on the income statement and balance sheet if adjusting entries for the following situations were not recorded.

- **a.** Office Supplies used, $800.
- **b.** Accrued service revenue, $4,000.
- **c.** Depreciation on building, $3,500.
- **d.** Prepaid Insurance expired, $650.
- **e.** Accrued salaries expense, $2,750.
- **f.** Service revenue that was collected in advance has now been earned, $130.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S3-14. MyAccountingLab

HOW COULD A WORKSHEET HELP IN PREPARING ADJUSTING ENTRIES AND THE ADJUSTED TRIAL BALANCE?

A useful step in preparing adjusting entries and the adjusted trial balance is to create a worksheet. A **worksheet** is an internal document that helps summarize data for the preparation of the financial statements. The worksheet is not a journal, a ledger, or a financial statement. It is merely a summary device that helps identify the accounts that need adjustments. Most worksheets are completed using Microsoft Excel.

Exhibit 3-7 (on the next page) shows the partially completed worksheet for Smart Touch Learning.

Learning Objective 6
Explain the purpose of a worksheet and use it to prepare adjusting entries and the adjusted trial balance

Worksheet
An internal document that helps summarize data for the preparation of financial statements.

Exhibit 3-7 **Partially Completed Worksheet**

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**SMART TOUCH LEARNING**												
2	**Worksheet**												
3	**December 31, 2016**												
4													
5	**Account Names**	**Unadjusted Trial Balance**			**Adjustments**			**Adjusted Trial Balance**		**Income Statement**		**Balance Sheet**	
6		**Debit**	**Credit**		**Debit**	**Credit**		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 12,200						$ 12,200					
8	Accounts Receivable	1,000		(h)	$ 800			1,800					
9	Office Supplies	500				$ 400	(b)	100					
10	Prepaid Rent	3,000				1,000	(a)	2,000					
11	Furniture	18,000						18,000					
12	Accumulated Depreciation—Furniture					300	(c)		$ 300				
13	Building	60,000						60,000					
14	Accumulated Depreciation—Building					250	(d)		250				
15	Land	20,000						20,000					
16	Accounts Payable		$ 200						200				
17	Utilities Payable		100						100				
18	Salaries Payable					1,200	(f)		1,200				
19	Interest Payable					100	(g)		100				
20	Unearned Revenue		600	(e)	200				400				
21	Notes Payable		60,000						60,000				
22	Common Stock		48,000						48,000				
23	Dividends	5,000						5,000					
24	Service Revenue		16,500			1,000	(e,h)		17,500				
25	Rent Expense	2,000		(a)	1,000			3,000					
26	Salaries Expense	3,600		(f)	1,200			4,800					
27	Supplies Expense			(b)	400			400					
28	Utilities Expense	100						100					
29	Depreciation Expense—Furniture			(c)	300			300					
30	Depreciation Expense—Building			(d)	250			250					
31	Interest Expense			(g)	100			100					
32	**Total**	**$ 125,400**	**$ 125,400**		**$ 4,250**	**$ 4,250**		**$ 128,050**	**$ 128,050**				
33													

In this chapter, we complete a part of the worksheet. For now, we will concern ourselves with the first four sections.

Section 1. Account names: The account names are taken from and listed in the same order as the chart of accounts. (Cash first, Accounts Receivable second, and so on.)

Section 2. Unadjusted trial balance: The account balances are copied directly from the ledger before any adjustments. Total debits must equal total credits.

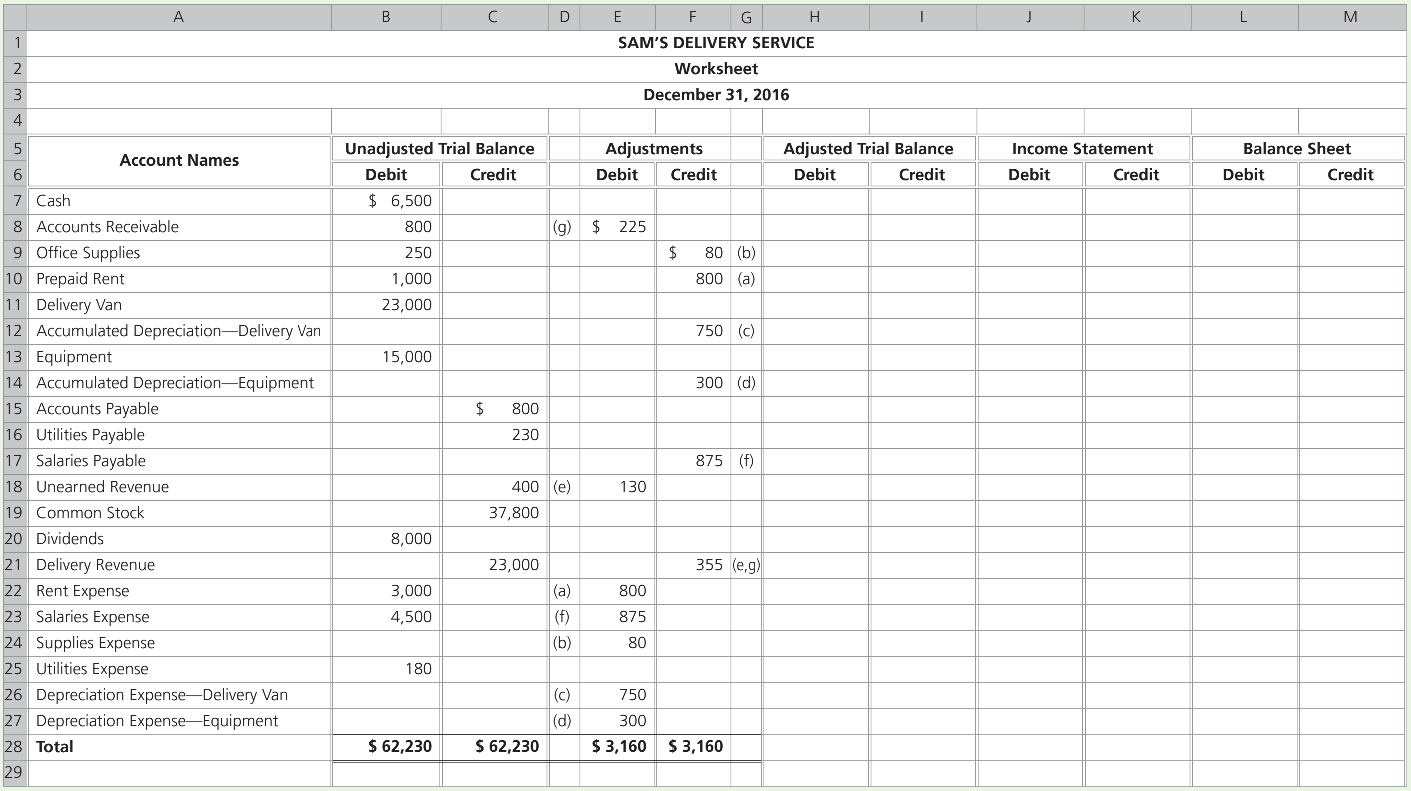
Section 3. Adjustments: Enter the adjusting journal entries that were made on December 31.

Section 4. Adjusted trial balance: Gives the account balances after adjustments. Each amount in these columns is computed by combining the unadjusted trial balance amounts plus or minus the adjustments. For example, Accounts Receivable starts with a debit balance of $1,000. Adding the $800 debit from the adjustment gives Accounts Receivable an adjusted balance of $1,800. Service Revenue starts with a $16,500 credit balance. Adding the $1,000 credit from the adjustment gives Service Revenue an adjusted balance of $17,500. As with the unadjusted trial balance, total debits must equal total credits.

The income statement and balance sheet sections of the worksheet remain to be completed. These will be covered in the next chapter.

Try It!

10. The partial worksheet for Sam's Delivery Service follows. Complete the adjusted trial balance columns.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**SAM'S DELIVERY SERVICE**												
2	**Worksheet**												
3	**December 31, 2016**												
4													
5	**Account Names**	**Unadjusted Trial Balance**			**Adjustments**			**Adjusted Trial Balance**		**Income Statement**		**Balance Sheet**	
6		**Debit**	**Credit**		**Debit**	**Credit**		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 6,500											
8	Accounts Receivable	800		(g)	$ 225								
9	Office Supplies	250				$ 80	(b)						
10	Prepaid Rent	1,000				800	(a)						
11	Delivery Van	23,000											
12	Accumulated Depreciation—Delivery Van					750	(c)						
13	Equipment	15,000											
14	Accumulated Depreciation—Equipment					300	(d)						
15	Accounts Payable		$ 800										
16	Utilities Payable		230										
17	Salaries Payable					875	(f)						
18	Unearned Revenue		400	(e)	130								
19	Common Stock		37,800										
20	Dividends	8,000											
21	Delivery Revenue		23,000			355	(e,g)						
22	Rent Expense	3,000		(a)	800								
23	Salaries Expense	4,500		(f)	875								
24	Supplies Expense			(b)	80								
25	Utilities Expense	180											
26	Depreciation Expense—Delivery Van			(c)	750								
27	Depreciation Expense—Equipment			(d)	300								
28	**Total**	**$ 62,230**	**$ 62,230**		**$ 3,160**	**$ 3,160**							
29													

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S3-15. MyAccountingLab

APPENDIX 3A: Alternative Treatment of Recording Deferred Expenses and Deferred Revenues

Chapters 1–3 illustrate the most popular way to account for deferred expenses and deferred revenues. This appendix illustrates an alternative approach.

WHAT IS AN ALTERNATIVE TREATMENT OF RECORDING DEFERRED EXPENSES AND DEFERRED REVENUES?

Learning Objective 7
Understand the alternative treatment of recording deferred expenses and deferred revenues

Deferred Expenses

Recall that deferred expenses, also called prepaid expenses, are advance payments of future expenses such as insurance, rent, and advertising. Office supplies are also accounted for as deferred expenses.

When a business prepays an expense—rent, for example—it can debit an *asset* account (Prepaid Rent) and defer the recognition of the expense. For example, Smart Touch Learning prepaid three months of office rent totaling $3,000 on December 1, 2016. The journal entry can be recorded as:

A↑↓ = **L** + **E**
Prepaid Rent ↑
Cash ↓

Date	Accounts and Explanation	Debit	Credit
Dec. 1	Prepaid Rent	3,000	
	Cash		3,000
	Paid rent in advance.		

Deferred Expense Recorded Initially as an Expense

Deferring an expense creates an asset. However, the asset may be so short lived that it will expire in the current accounting period—within one year or less. Thus, the accountant may decide to debit the prepayment to an expense account at the time of payment. The entry could, alternatively, be recorded as follows:

A↓ = **L** + **E↓**
Cash↓
Rent Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 1	Rent Expense	3,000	
	Cash		3,000
	Paid rent in advance.		

As of December 31, only one month's prepayment has expired, leaving two months of rent still prepaid. In this case, the accountant must transfer two-thirds of the original prepayment of $3,000, or $2,000, to the asset account Prepaid Rent. At December 31, 2016, the business still has the benefit of prepayment for January 1 through February 28, 2017. The adjusting entry at December 31 is as follows:

A↑ = **L** + **E↑**
Prepaid Rent↑
Rent Expense↓

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Prepaid Rent	2,000	
	Rent Expense		2,000
	To record prepaid rent.		

After posting, the two accounts appear as follows:

Prepaid Rent

Dec. 31	2,000		
Bal.	2,000		

Rent Expense

Dec. 1	3,000	2,000	Dec. 31
Bal.	1,000		

At December 31, the $3,000 prepayment is correctly divided as $2,000 of Prepaid Rent and $1,000 of Rent Expense, regardless of whether the business initially debits the prepayment to an asset or to an expense account.

Deferred Revenues

Deferred revenues, also called unearned revenues, arise when a business collects cash before earning the revenue. Deferred revenues are liabilities because the business that receives the cash owes the customer goods or services to be delivered later.

When a business receives cash in advance of providing services, a *liability* can be created. As an example, a law firm engages Smart Touch Learning to provide monthly e-learning services, agreeing to pay $600 in advance. Smart Touch Learning received the $600 on December 21. Smart Touch Learning records the following entry, recognizing the liability and deferring the recognition of the revenue.

Date	Accounts and Explanation	Debit	Credit
Dec. 21	Cash	600	
	Unearned Revenue		600
	Collected cash for future services.		

A↑	=	**L↑**	+	**E**
Cash↑		Unearned Revenue↑		

Deferred Revenues Recorded Initially as a Revenue

Another way to account for the receipt of cash is to credit a *revenue* account when the business receives cash.

Date	Accounts and Explanation	Debit	Credit
Dec. 21	Cash	600	
	Service Revenue		600
	Collected cash for future services.		

A↑	=	**L**	+	**E↑**
Cash↑				Service Revenue↑

If the business then earns all the revenue within the same accounting period, no adjusting entry is needed at the end. However, if the business earns only part of the revenue in that period, it must make an adjusting entry. In our example, Smart Touch Learning has earned only one-third of the $600, or $200, by December 31, 2016. Accordingly, Smart Touch Learning must make an adjusting entry to transfer the unearned portion (2/3 of $600, or $400) from the revenue account to a liability, as follows:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Service Revenue	400	
	Unearned Revenue		400
	To record unearned revenue.		

A	=	**L↑**	+	**E↓**
		Unearned Revenue↑		Service Revenue↓

The adjusting entry transfers the unearned portion of service revenue to the liability account because Smart Touch Learning still owes e-learning services next year. After posting, the total amount, $600, is properly divided between the liability account—$400, and the revenue account—$200, as follows:

Unearned Revenue

		400	Dec. 31
		400	Bal.

Service Revenue

Dec. 31	400	600	Dec. 21
		200	Bal.

At December 31, the $600 cash receipt is correctly divided: $400 of Unearned Revenue and $200 of Service Revenue, regardless of whether the business initially credits the cash receipt to a liability or to a revenue account.

Try It!

11A. Iron Horse Printing Services purchased $1,000 of printing supplies for cash, recording the transaction using the alternative treatment for deferred expenses. At the end of the year, Iron Horse had $300 of printing supplies remaining. Record the journal entry for the purchase of printing supplies and the adjusting entry for printing supplies not used.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S3A-16 and S3A-17. MyAccountingLab

REVIEW

> Things You Should Know

1. What is the difference between cash basis accounting and accrual basis accounting?

- Cash basis accounting: Revenue is recorded only when cash is received, and expenses are recorded only when cash is paid.
    - Not GAAP
    - Often used by small businesses
- Accrual basis accounting: Revenue is recorded when earned, and expenses are recorded when incurred.

2. What concepts and principles apply to accrual basis accounting?

- The time period concept assumes that a business's activities can be sliced into small time segments and that financial statements can be prepared for specific periods, such as a month, quarter, or year.
- The revenue recognition principle requires companies to record revenue when it has been earned and determines the amount of revenue to record.
- The matching principle guides accounting for expenses and ensures that all expenses are recorded when they are incurred during the period. It then matches those expenses against the revenues of the period.

3. What are adjusting entries, and how do we record them?

- Adjusting entries are completed at the end of the accounting period and record revenues to the period in which they are earned and expenses to the period in which they occur.

- Adjusting entries also update the asset and liability accounts.
- Four types of adjusting entries:
  - Deferred expenses (or prepaid expenses): advance payment of future expenses adjusted for amount used

Date	Accounts and Explanation	Debit	Credit
	Expense	XXX	
	Asset		XXX

  - Deferred revenues (or unearned revenues): advance receipts of future revenues adjusted for amount earned

Date	Accounts and Explanation	Debit	Credit
	Liability	XXX	
	Revenue		XXX

  - Accrued expenses: expenses that have been incurred but not paid

Date	Accounts and Explanation	Debit	Credit
	Expense	XXX	
	Liability		XXX

  - Accrued revenues: revenues that have been earned but not collected

Date	Accounts and Explanation	Debit	Credit
	Asset	XXX	
	Revenue		XXX

4. What is the purpose of the adjusted trial balance, and how do we prepare it?

- An adjusted trial balance is a list of all the accounts with their adjusted balances.
- It ensures that total debits equal total credits.

5. What is the impact of adjusting entries on the financial statements?

- If adjusting entries are not recorded, the balance sheet and income statement accounts will either be overstated or understated.
- Overstating or understating accounts causes the financial statements to be incorrect.

6. How could a worksheet help in preparing adjusting entries and the adjusted trial balance?

- A worksheet is an internal document that helps identify the accounts that need adjustments.
- In addition, a worksheet helps summarize data for the preparation of the financial statements.

7. What is an alternative treatment of recording deferred expenses and deferred revenues? (Appendix 3A)

- Deferred expenses can be recorded to an expense account at the time of payment. The adjusting entry would transfer any remaining prepayment to the asset account, Prepaid Expenses.
- Deferred revenues can be recorded to a revenue account at the time of cash receipt. The adjusting entry would transfer any remaining liability to the liability account, Unearned Revenue.

> Summary Problem 3-1

The unadjusted trial balance as of December 31, 2016, the end of the annual accounting period for Super Employment Services, follows:

SUPER EMPLOYMENT SERVICES
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 6,000	
Accounts Receivable	5,000	
Office Supplies	1,000	
Furniture	10,000	
Accumulated Depreciation—Furniture		$ 4,000
Building	40,000	
Accumulated Depreciation—Building		30,000
Land	10,000	
Accounts Payable		2,000
Salaries Payable		
Unearned Revenue		8,000
Common Stock		12,000
Dividends	25,000	
Service Revenue		60,000
Salaries Expense	16,000	
Supplies Expense		
Depreciation Expense—Furniture		
Depreciation Expense—Building		
Advertising Expense	3,000	
Total	**$ 116,000**	**$ 116,000**

Data needed for the adjusting entries include the following:

- **a.** Office Supplies on hand at year-end, $200.
- **b.** Depreciation on furniture, $2,000.
- **c.** Depreciation on building, $1,000.
- **d.** Salaries owed but not yet paid, $500.
- **e.** Accrued service revenue, $1,300.
- **f.** $3,000 of the unearned revenue has been earned.

Requirements

1. Open the ledger accounts in T-account form with their unadjusted balances as shown on the unadjusted trial balance.
2. Journalize Super's adjusting entries at December 31, 2016. Use the letter (*a*, *b*, and so on) as the date.
3. Post the adjusting entries to T-accounts. Determine the ending balances in the T-accounts on December 31, 2016.
4. Prepare an adjusted trial balance.
5. Prepare a partial worksheet including the account names, unadjusted trial balance, adjustments, and adjusted trial balance.

> Solution

Requirement 1 - See next page

Requirement 2

Date	Accounts and Explanations	Debit	Credit
2016			
(a) Dec. 31	Supplies Expense ($1,000 – $200)	800	
	Office Supplies		800
	To record office supplies used.		
(b) 31	Depreciation Expense—Furniture	2,000	
	Accumulated Depreciation—Furniture		2,000
	To record depreciation expense on furniture.		
(c) 31	Depreciation Expense—Building	1,000	
	Accumulated Depreciation—Building		1,000
	To record depreciation expense on building.		
(d) 31	Salaries Expense	500	
	Salaries Payable		500
	To accrue salaries expense.		
(e) 31	Accounts Receivable	1,300	
	Service Revenue		1,300
	To accrue service revenue.		
(f) 31	Unearned Revenue	3,000	
	Service Revenue		3,000
	To record service revenue earned that was collected in advance.		

Requirements 1 and 3

ASSETS

Cash

Bal.	6,000		

Accounts Receivable

Bal.	5,000		
(e)	1,300		
Bal.	6,300		

Office Supplies

Bal.	1,000	800	(a)
Bal.	200		

Furniture

Bal.	10,000		

Accumulated Depreciation—Furniture

		4,000	Bal.
		2,000	(b)
		6,000	Bal.

Building

Bal.	40,000		

Accumulated Depreciation—Building

		30,000	Bal.
		1,000	(c)
		31,000	Bal.

Land

Bal.	10,000		

LIABILITIES

Accounts Payable

		2,000	Bal.

Salaries Payable

		500	(d)
		500	Bal.

Unearned Revenue

(f)	3,000	8,000	Bal.
		5,000	Bal.

EQUITY

Common Stock

		12,000	Bal.

Dividends

Bal.	25,000		

Service Revenue

		60,000	Bal.
		1,300	(e)
		3,000	(f)
		64,300	Bal.

Salaries Expense

Bal.	16,000		
(d)	500		
Bal.	16,500		

Supplies Expense

(a)	800		
Bal.	800		

Depreciation Expense—Furniture

(b)	2,000		
Bal.	2,000		

Depreciation Expense—Building

(c)	1,000		
Bal.	1,000		

Advertising Expense

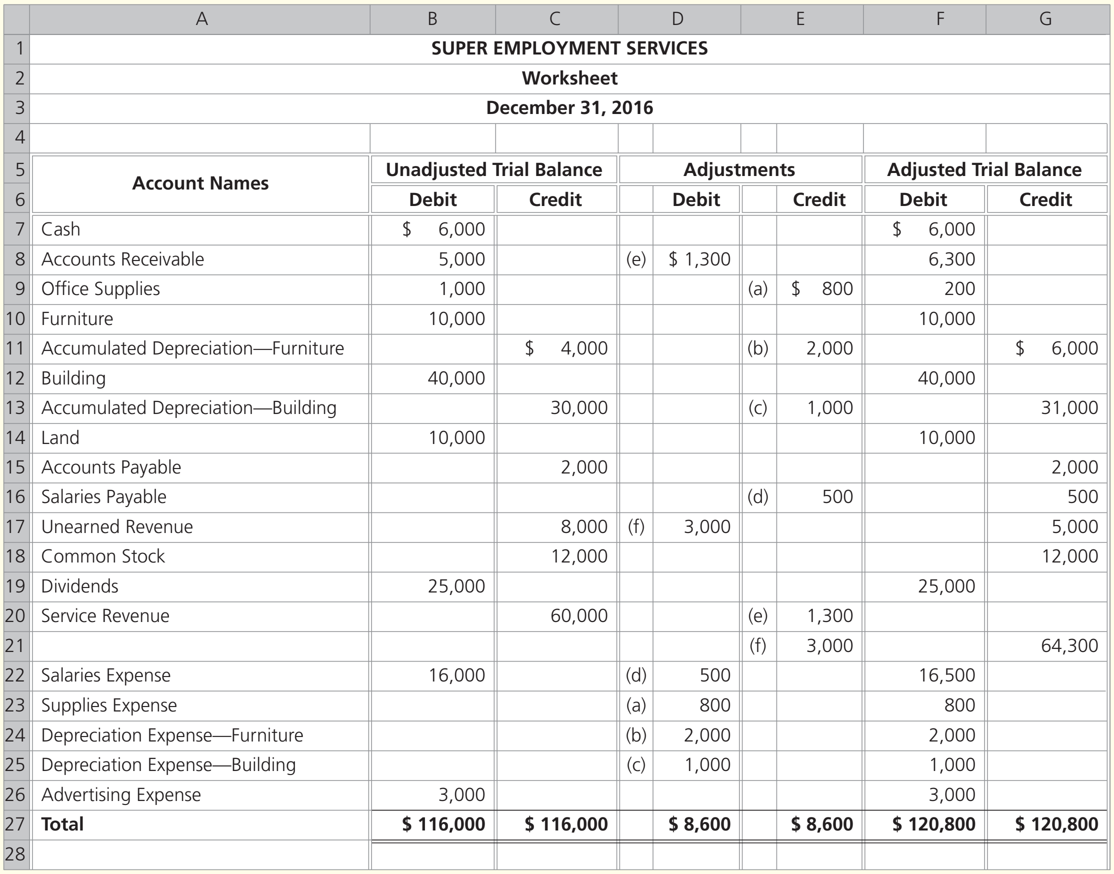
Bal.	3,000		

Requirement 4

SUPER EMPLOYMENT SERVICES
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 6,000	
Accounts Receivable	6,300	
Office Supplies	200	
Furniture	10,000	
Accumulated Depreciation—Furniture		$ 6,000
Building	40,000	
Accumulated Depreciation—Building		31,000
Land	10,000	
Accounts Payable		2,000
Salaries Payable		500
Unearned Revenue		5,000
Common Stock		12,000
Dividends	25,000	
Service Revenue		64,300
Salaries Expense	16,500	
Supplies Expense	800	
Depreciation Expense—Furniture	2,000	
Depreciation Expense—Building	1,000	
Advertising Expense	3,000	
Total	**$ 120,800**	**$ 120,800**

Requirement 5



	A	B	C	D		E		F	G
1	SUPER EMPLOYMENT SERVICES								
2	Worksheet								
3	December 31, 2016								
4									
5	Account Names	Unadjusted Trial Balance		Adjustments				Adjusted Trial Balance	
6		Debit	Credit		Debit		Credit	Debit	Credit
7	Cash	$ 6,000						$ 6,000	
8	Accounts Receivable	5,000		(e)	$ 1,300			6,300	
9	Office Supplies	1,000				(a)	$ 800	200	
10	Furniture	10,000						10,000	
11	Accumulated Depreciation—Furniture		$ 4,000			(b)	2,000		$ 6,000
12	Building	40,000						40,000	
13	Accumulated Depreciation—Building		30,000			(c)	1,000		31,000
14	Land	10,000						10,000	
15	Accounts Payable		2,000						2,000
16	Salaries Payable					(d)	500		500
17	Unearned Revenue		8,000	(f)	3,000				5,000
18	Common Stock		12,000						12,000
19	Dividends	25,000						25,000	
20	Service Revenue		60,000			(e)	1,300		
21						(f)	3,000		64,300
22	Salaries Expense	16,000		(d)	500			16,500	
23	Supplies Expense			(a)	800			800	
24	Depreciation Expense—Furniture			(b)	2,000			2,000	
25	Depreciation Expense—Building			(c)	1,000			1,000	
26	Advertising Expense	3,000						3,000	
27	**Total**	**$ 116,000**	**$ 116,000**		**$ 8,600**		**$ 8,600**	**$ 120,800**	**$ 120,800**
28									

> Key Terms

Accrual Basis Accounting (p. 142)

Accrued Expense (p. 154)

Accrued Revenue (p. 157)

Accumulated Depreciation (p. 151)

Adjusted Trial Balance (p. 162)

Adjusting Entry (p. 147)

Book Value (p. 152)

Cash Basis Accounting (p. 142)

Contra Account (p. 151)

Deferred Expense (p. 147)

Deferred Revenue (p. 153)

Depreciation (p. 150)

Fiscal Year (p. 144)

Matching Principle (p. 145)

Plant Asset (p. 149)

Residual Value (p. 150)

Revenue Recognition Principle (p. 144)

Straight-Line Method (p. 150)

Time Period Concept (p. 144)

Worksheet (p. 165)

> Quick Check

Learning Objective 1

1. Which of the following is true of accrual basis accounting and cash basis accounting?
   - **a.** Accrual accounting records revenue only when it is earned.
   - **b.** Accrual accounting is not allowed under GAAP.
   - **c.** Cash basis accounting records all transactions.
   - **d.** All of the above are true.

Learning Objective 1

2. Get Fit Now gains a client who prepays $540 for a package of six physical training sessions. Get Fit Now collects the $540 in advance and will provide the training later. After four training sessions, what should Get Fit Now report on its income statement assuming it uses the accrual basis accounting method?
   - **a.** Service revenue of $360
   - **b.** Service revenue of $540
   - **c.** Unearned service revenue of $360
   - **d.** Cash of $180

Learning Objective 2

3. The revenue recognition principle requires
   - **a.** time to be divided into annual periods to measure revenue properly.
   - **b.** revenue to be recorded only after the business has earned it.
   - **c.** expenses to be matched with revenue of the period.
   - **d.** revenue to be recorded only after the cash is received.

Learning Objective 3

4. Adjusting the accounts is the process of
   - **a.** subtracting expenses from revenues to measure net income.
   - **b.** recording transactions as they occur during the period.
   - **c.** updating the accounts at the end of the period.
   - **d.** zeroing out account balances to prepare for the next period.

Learning Objective 3

5. Which of the following is an example of a deferral (or prepaid) adjusting entry?
   - **a.** Recording the usage of office supplies during the period.
   - **b.** Recording salaries expense for employees not yet paid.
   - **c.** Recording revenue that has been earned but not yet received.
   - **d.** Recording interest expense incurred on a notes payable not due until next year.

Learning Objective 3

6. Assume that the weekly payroll of In the Woods Camping Supplies is $300. December 31, end of the year, falls on Tuesday, and In the Woods will pay its employee on Friday for the full week. What adjusting entry will In the Woods make on Tuesday, December 31? (Use five days as a full workweek.)

Date	Accounts and Explanation	Debit	Credit
a.	Salaries Expense	120	
	Salaries Payable		120
b.	Salaries Payable	300	
	Salaries Expense		300
c.	Salaries Expense	120	
	Cash		120
d.	*No adjustment is needed because the company will pay the payroll on Friday.*		

Learning Objective 4

7. The adjusted trial balance shows
   - **a.** amounts that may be out of balance.
   - **b.** account balances after adjustments.
   - **c.** assets and liabilities only.
   - **d.** revenues and expenses only.

Learning Objective 5

8. A & D Window Cleaning performed $450 of services but has not yet billed customers for the month. If A & D fails to record the adjusting entry, what is the impact on the financial statements?
   - **a.** balance sheet: assets understated; equity overstated
     income statement: expense understated
   - **b.** balance sheet: liabilities overstated; equity understated
     income statement: revenues understated
   - **c.** balance sheet: assets overstated, equity understated
     income statement: expenses understated
   - **d.** balance sheet: assets understated, equity understated
     income statement: revenues understated

Learning Objective 6

9. A worksheet
   - **a.** is a journal used to record transactions.
   - **b.** is a financial statement that reports net income during the period.
   - **c.** is an internal document that helps summarize data for the preparation of financial statements.
   - **d.** is a ledger listing the account balances and changes in those accounts.

Learning Objective 7
Appendix 3A

10A. On February 1, Clovis Wilson Law Firm contracted to provide $3,000 of legal services for the next three months and received $3,000 cash from the client. Assuming Wilson records deferred revenues using the alternative treatment, what would be the adjusting entry recorded on February 28?

Date	Accounts and Explanation	Debit	Credit
a.	Cash	3,000	
	Unearned Revenue		3,000
b.	Service Revenue	2,000	
	Unearned Revenue		2,000
c.	Unearned Revenue	1,000	
	Service Revenue		1,000
d.	Cash	3,000	
	Service Revenue		3,000

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is the difference between cash basis accounting and accrual basis accounting?
2. Which method of accounting (cash or accrual basis) is consistent with Generally Accepted Accounting Principles?
3. Which accounting concept or principle requires companies to divide their activities into small time segments such as months, quarters, or years?
4. What is a fiscal year? Why might companies choose to use a fiscal year that is not a calendar year?

5. Under the revenue recognition principle, when is revenue recorded?
6. Under the matching principle, when are expenses recorded?
7. When are adjusting entries completed, and what is their purpose?
8. What are the two basic categories of adjusting entries? Provide two examples of each.
9. What is a deferred expense? Provide an example.
10. What is the process of allocating the cost of a plant asset over its useful life called?
11. What is a contra account?
12. In the recording of depreciation expense, which account is credited?
13. What does accumulated depreciation represent?
14. How is book value calculated, and what does it represent?
15. What is a deferred revenue? Provide an example.
16. What is an accrued expense? Provide an example.
17. What is an accrued revenue? Provide an example.
18. What are the two rules to remember about adjusting entries?
19. When is an adjusted trial balance prepared, and what is its purpose?
20. If an accrued expense is not recorded at the end of the year, what is the impact on the financial statements?
21. What is a worksheet, and how is it used to help prepare an adjusted trial balance?

22A. If a payment of a deferred expense was recorded under the alternative treatment, what account would be debited at the time of payment?

23A. If a payment of a deferred expense was recorded under the alternative treatment, what account would be debited in the adjusting entry?

> Short Exercises

S3-1 Comparing cash and accrual basis accounting for expenses

Learning Objective 1

The Jack Frost Law Firm prepays for advertising in the local newspaper.
On January 1, the law firm paid $4,500 for six months of advertising.

How much advertising expense should Jack Frost Law Firm record for the two months ending February 28 under the

a. cash basis? **b.** accrual basis?

S3-2 Comparing cash and accrual basis accounting for revenues

Learning Objective 1

Secure Home provides house-sitting for people while they are away on vacation. Some of its customers pay immediately after the job is finished. Some customers ask that the business send them a bill. As of the end of the year, Secure Home has collected $700 from cash-paying customers. Secure Home's remaining customers owe the business $900.

How much service revenue would Secure Home have for the year under the

a. cash basis? **b.** accrual basis?

Learning Objective 2

S3-3 Applying the revenue recognition principle

Midwest Magazine sells subscriptions for $60 for 30 issues. The company collects cash in advance and then mails out the magazines to subscribers each month.

Apply the revenue recognition principle to determine

a. when *Midwest Magazine* should record revenue for this situation.

b. the amount of revenue *Midwest Magazine* should record for ten issues.

Learning Objective 2

S3-4 Applying the matching principle

Suppose on January 1 Aiden's Tavern prepaid rent of $14,400 for the full year.

At March 31, how much rent expense should be recorded for the period January 1 through March 31?

Learning Objective 3

S3-5 Identifying types of adjusting entries

A select list of transactions for Anuradha's Goals follows:

Apr.	1	Paid six months of rent, $4,800.
	10	Received $1,200 from customer for six-month service contract that began April 1.
	15	Purchased a computer for $1,000.
	18	Purchased $300 of office supplies on account.
	30	Work performed but not yet billed to customer, $500.
	30	Employees earned $600 in salaries that will be paid May 2.

For each transaction, identify what type of adjusting entry would be needed. Select from the following four types of adjusting entries: deferred expense, deferred revenue, accrued expense, accrued revenue.

Learning Objective 3

S3-6 Journalizing and posting adjusting entries for prepaid rent

On June 1, Gear Up of Toledo prepaid six months of rent, $3,900.

Requirements

1. Record the journal entry for the June 1 payment.
2. Record the adjusting entry required at June 30.
3. Using T-accounts, post the journal entry and adjusting entry to the accounts involved and show their balances at June 30. (Ignore the Cash account.)

Learning Objective 3

S3-7 Journalizing and posting an adjusting entry for office supplies

On November 1, Carley Equipment had a beginning balance in the Office Supplies account of $1,400. During the month, Carley purchased $2,300 of office supplies. At November 30, Carley Equipment had $1,800 of office supplies on hand.

Requirements

1. The Office Supplies T-account has been opened for you. Enter the beginning balance and purchase of office supplies.
2. Record the adjusting entry required at November 30.
3. Post the adjusting entry to the two accounts involved, and show their balances at November 30.

Learning Objective 3

S3-8 Journalizing and posting an adjusting entry for depreciation and determining book value

On May 1, Chicago Gold Exchange paid cash of $28,800 for computers that are expected to remain useful for four years. At the end of four years, the value of the computers is expected to be zero.

Requirements

1. Calculate the amount of depreciation for the month of May using the straight-line depreciation method.
2. Record the adjusting entry for depreciation on May 31.
3. Post the purchase of May 1 and the depreciation on May 31 to T-accounts for the following accounts: Computer Equipment, Accumulated Depreciation—Computer Equipment, and Depreciation Expense—Computer Equipment. Show their balances at May 31.
4. What is the computer equipment's book value on May 31?

Learning Objective 3

S3-9 Journalizing and posting an adjusting entry for unearned revenue

Southern Magazine collects cash from subscribers in advance and then mails the magazines to subscribers over a one-year period.

Requirements

1. Record the journal entry to record the original receipt of $150,000 cash.
2. Record the adjusting entry that *Southern Magazine* makes to record earning $9,000 in subscription revenue that was collected in advance.
3. Using T-accounts, post the journal entry and adjusting entry to the accounts involved and show their balances after adjustments. (Ignore the Cash account.)

Learning Objective 3

S3-10 Journalizing and posting an adjusting entry for accrued salaries expense

Pine Park Senior Center has a weekly payroll of $25,000. December 31 falls on Wednesday, and Pine Park Senior Center will pay its employees the following Monday (January 5) for the previous full week. Assume Pine Park Senior Center has a five-day workweek and has an unadjusted balance in Salaries Expense of $520,000.

Requirements

1. Record the adjusting entry for accrued salaries on December 31.
2. Post the adjusting entry to the accounts involved, and show their balances after adjustments.
3. Record the journal entry for payment of salaries made on January 5.

Learning Objective 3

S3-11 Journalizing and posting an adjusting entry for accrued interest expense

Fly Away Travel borrowed $26,000 on August 1, 2016, by signing a one-year note payable to Region One Bank. Fly Away's interest expense on the note payable for the remainder of the fiscal year (August through October) is $494.

Requirements

1. Record the adjusting entry to accrue interest expense at October 31, 2016.
2. Post the adjusting entry to the T-accounts of the two accounts affected by the adjustment.

Learning Objective 3

S3-12 Journalizing an adjusting entry for accrued revenue

At the end of June, Gallio Dental had performed $8,000 of dental services but has not yet billed customers.

Record the adjusting entry for accrued revenue.

Learning Objective 4

S3-13 Preparing an adjusted trial balance

Simon's Tax Services had the following accounts and account balances after adjusting entries. Assume all accounts have normal balances.

Cash	$?	Equipment	$ 14,000
Land	22,000	Accounts Receivable	2,750
Utilities Payable	500	Office Supplies	800
Accounts Payable	4,500	Common Stock	24,100
Accumulated Depreciation—Equipment	1,800	Utilities Expense	1,050
Service Revenue	110,000	Unearned Revenue	1,600
Supplies Expense	1,300	Depreciation Expense—Equipment	2,100
Dividends	24,000	Salaries Expense	5,500

Prepare the adjusted trial balance for Simon's Tax Services as of December 31, 2016.

Learning Objective 5

S3-14 Determining the effects on financial statements

In recording adjusting entries, Reagan Financial Advisors failed to record the adjusting entries for the following situations:

a. Office supplies on hand, $100.

b. Accrued revenues, $5,000.

c. Accrued interest expense, $250.

d. Depreciation, $800.

e. Unearned revenue that has been earned, $550.

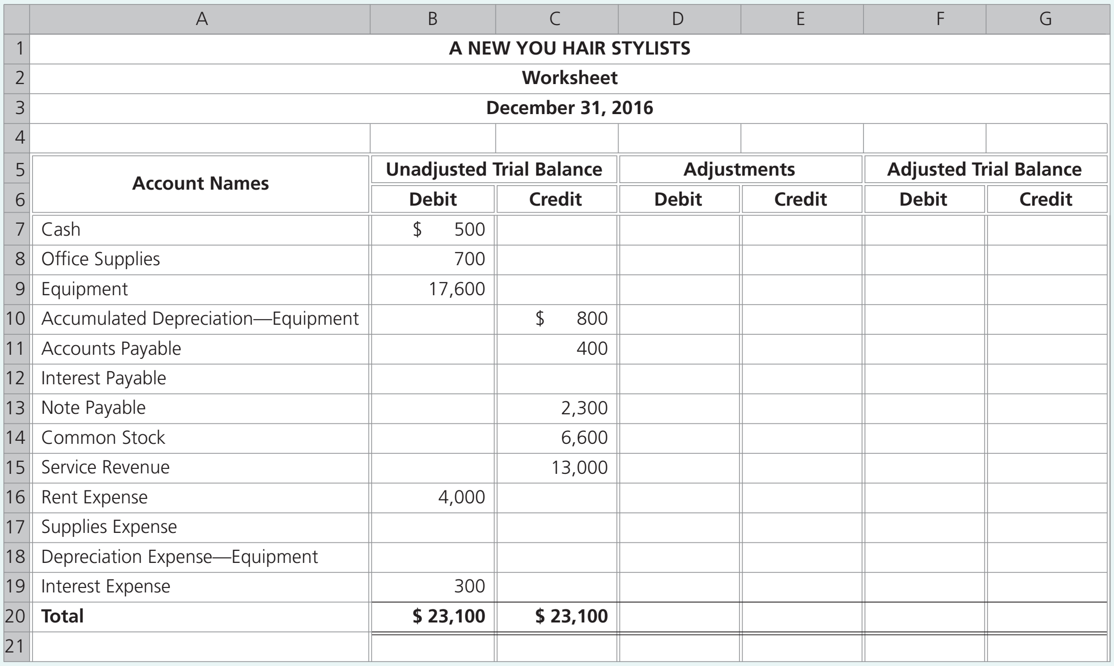
Determine the effects on the income statement and balance sheet by identifying whether assets, liabilities, equity, revenue, and expenses are either overstated or understated. Use the following table. Adjustment *a* has been provided as an example.

Adjustment	**Balance Sheet**			**Income Statement**	
Not Recorded	**Assets**	**Liabilities**	**Equity**	**Revenue**	**Expenses**
(a)	*Overstated*		*Overstated*		*Understated*

Learning Objective 6

S3-15 Preparing a partial worksheet

A New You Hair Stylists has begun the preparation of its worksheet as follows:



	A	B	C	D	E	F	G
1	**A NEW YOU HAIR STYLISTS**						
2	**Worksheet**						
3	**December 31, 2016**						
4							
5	**Account Names**	**Unadjusted Trial Balance**		**Adjustments**		**Adjusted Trial Balance**	
6		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 500					
8	Office Supplies	700					
9	Equipment	17,600					
10	Accumulated Depreciation—Equipment		$ 800				
11	Accounts Payable		400				
12	Interest Payable						
13	Note Payable		2,300				
14	Common Stock		6,600				
15	Service Revenue		13,000				
16	Rent Expense	4,000					
17	Supplies Expense						
18	Depreciation Expense—Equipment						
19	Interest Expense	300					
20	**Total**	**$ 23,100**	**$ 23,100**				
21							

Year-end data include the following:

a. Office supplies on hand, $200

b. Depreciation, $800

c. Accrued interest expense, $300

Complete A New You's worksheet through the adjusted trial balance section. In the adjustments section, mark each adjustment by letter.

Learning Objective 7
Appendix 3A

S3A-16 Journalizing the alternative treatment of deferred expenses

On August 1, 2016, Blue Design paid $66,000 for store rent covering the 12-month period ending July 31, 2017.

Requirements

1. Journalize the entry on August 1 by using the alternative treatment of deferred expenses.
2. Record the December 31, 2016 adjusting entry.

Learning Objective 7
Appendix 3A

S3A-17 Journalizing the alternative treatment of deferred revenues

On October 1, 2016, Amazing Landscaping collected $30,000 in advance from customers for landscaping services. The service revenue will be earned monthly over the six-month period ending March 31, 2017.

Requirements

1. Journalize the entry on October 1 by using the alternative treatment of deferred revenues.
2. Record the December 31, 2016 adjusting entry.

> Exercises

Learning Objectives 1, 2

E3-18 Comparing cash and accrual basis accounting and applying the revenue recognition principle

Momentous Occasions is a photography business that shoots videos at college parties. The freshman class pays $1,000 in advance on March 3 to guarantee services for its party to be held on April 2. The sophomore class promises a minimum of $2,800 for filming its formal dance and actually pays cash of $4,100 on February 28 at the dance.

Answer the following questions about the correct way to account for revenue under the accrual basis:

a. Considering the $1,000 paid by the freshman class, on what date was revenue earned? Did the earnings occur on the same date cash was received?

b. Considering the $4,100 paid by the sophomore class, on what date was revenue earned? Did the earnings occur on the same date cash was received?

Learning Objectives 1, 2

2. Cash basis $(3,400)

E3-19 Comparing cash and accrual basis accounting and applying the revenue recognition principle and the matching principle

Yummy Catering completed the following selected transactions during May, 2016:

May	1	Prepaid rent for three months, $2,100.
	5	Received and paid electricity bill, $400.
	9	Received cash for meals served to customers, $2,600.
	14	Paid cash for kitchen equipment, $3,900.
	23	Served a banquet on account, $2,800.
	31	Made the adjusting entry for rent (from May 1).
	31	Accrued salary expense, $1,000.
	31	Recorded depreciation for May on kitchen equipment, $65.

Requirements

1. Show whether each transaction would be handled as a revenue or an expense using both the cash basis and accrual basis accounting systems by completing the table provided. (Expenses should be shown in parentheses.) Also indicate the dollar amount of the revenue or expense. The May 1 transaction has been completed as an example.

	Amount of Revenue (Expense) for May	
Date	Cash Basis Amount of Revenue (Expense)	Accrual Basis Amount of Revenue (Expense)
May 1	*$(1,800)*	*$0*

2. After completing the table, calculate the amount of net income or net loss for Yummy Catering under the accrual basis and cash basis accounting systems for May.
3. Considering your results from Requirement 2, which method gives the best picture of the true earnings of Yummy Catering? Why?

E3-20 Determining the amount of prepaid expenses

Learning Objective 3

Situation A. Rent Expense $1,200

Consider the facts presented in the following table for Island View:

	Situation			
	A	**B**	**C**	**D**
Beginning Prepaid Rent	$1,100	$ 600	$ 300	$ 300
Payments for Prepaid Rent during the year	900	*b*	1,500	*f*
Total amount to account for	2,000	1,900	*c*	*e*
Subtract: Ending Prepaid Rent	600	300	*d*	100
Rent Expense	$ *a*	$1,600	$1,600	$1,200

Complete the table by filling in the missing values.

E3-21 Journalizing adjusting entries

Learning Objective 3

b. DR Salaries Expense $1,600

Consider the following situations:

a. Business receives $3,200 on January 1 for 10-month service contract for the period January 1 through October 31.

b. Total salaries for all employees is $3,100 per month. Employees are paid on the 1st and 15th of the month.

c. Work performed but not yet billed to customers for the month is $1,500.

d. The company pays interest on its $8,000, 4% note payable of $27 on the first day of each month.

Assume the company records adjusting entries monthly. Journalize the adjusting entries needed as of January 31.

E3-22 Journalizing adjusting entries

Learning Objective 3

e. DR Insurance Expense $750

Consider the following independent situations at December 31:

a. On July 1, a business collected $6,600 rent in advance, debiting Cash and crediting Unearned Revenue. The tenant was paying one year's rent in advance. On December 31, the business must account for the amount of rent it has earned.

b. Salaries expense is $1,300 per day—Monday through Friday—and the business pays employees each Friday. This year, December 31 falls on a Thursday.

c. The unadjusted balance of the Office Supplies account is $2,600. Office supplies on hand total $1,800.

d. Equipment depreciation was $200.

e. On October 1, when the business prepaid $6,000 for a two-year insurance policy, the business debited Prepaid Insurance and credited Cash.

Journalize the adjusting entry needed on December 31 for each situation. Use the letters to label the journal entries.

E3-23 Journalizing adjusting entries

Learning Objective 3

c. DR Supplies Expense $3,300

Consider the following situations for Bookfield Welding Services:

a. Depreciation for the current year includes equipment, $2,700.

b. Each Monday, Bookfield pays employees for the previous week's work. The amount of weekly payroll is $3,500 for a seven-day workweek (Monday to Sunday). This year, December 31 falls on Thursday.

c. The beginning balance of Office Supplies was $2,600. During the year, Bookfield purchased office supplies for $2,500, and at December 31 the office supplies on hand totaled $1,800.

d. Bookfield prepaid a two full years' insurance on October 1 of the current year, $6,480. Record insurance expense for the year ended December 31.

e. Bookfield had earned $3,400 of unearned revenue.

f. Bookfield had incurred (but not recorded) $150 of interest expense on a note payable. The interest will not be paid until February 28.

g. Bookfield billed customers $9,000 for welding services performed.

Journalize the adjusting entry needed on December 31 for each situation. Use the letters to label the journal entries.

Learning Objective 3

3. Unearned Revenue bal. $600 CR

E3-24 Journalizing adjusting entries and posting to T-accounts

The accounting records of Calvin Architects include the following selected, unadjusted balances at March 31: Accounts Receivable, $1,200; Office Supplies, $600; Prepaid Rent, $2,400; Equipment, $6,000; Accumulated Depreciation—Equipment, $0, Salaries Payable, $0; Unearned Revenue, $500; Service Revenue, $4,200; Salaries Expense, $900; Supplies Expense, $0; Rent Expense, $0; Depreciation Expense—Equipment, $0. The data developed for the March 31 adjusting entries are as follows:

a. Service revenue accrued, $500.

b. Unearned revenue that has been earned, $200.

c. Office Supplies on hand, $400.

d. Salaries owed to employees, $700.

e. One month of prepaid rent has expired, $600.

f. Depreciation on equipment, $90.

Requirements

1. Journalize the adjusting entries using the letter and March 31 date in the date column.
2. Post the adjustments to the T-accounts opened for you, entering each adjustment by letter. Show each account's adjusted balance.

Learning Objective 3

3. Office Supplies bal. $1,100 DR

E3-25 Journalizing adjusting entries and posting to T-accounts

The unadjusted trial balance for First Class Maids Company, a cleaning service, is as follows:

FIRST CLASS MAIDS COMPANY
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 1,200	
Office Supplies	3,000	
Prepaid Insurance	700	
Equipment	20,000	
Accumulated Depreciation—Equipment		$ 6,000
Accounts Payable		2,200
Salaries Payable		
Unearned Revenue		600
Common Stock		8,100
Dividends	3,000	
Service Revenue		17,000
Salaries Expense	6,000	
Supplies Expense		
Depreciation Expense—Equipment		
Insurance Expense		
Total	**$ 33,900**	**$ 33,900**

During the 12 months ended December 31, 2016, First Class Maids:

a. used office supplies of $1,900.

b. used prepaid insurance of $560.

c. depreciated equipment, $510.

d. accrued salaries expense of $250 that hasn't been paid yet.

e. earned $420 of unearned revenue.

Requirements

1. Open a T-account for each account using the unadjusted balances.
2. Journalize the adjusting entries using the letter and December 31 date in the date column.
3. Post the adjustments to the T-accounts, entering each adjustment by letter. Show each account's adjusted balance.

Note: Exercise E3-26 should be used only in conjunction with Exercise E3-25.

Learning Objective 4

Adjusted trial balance $34,660 total

E3-26 Preparing an adjusted trial balance

Refer to the data in Exercise E3-25, and prepare an adjusted trial balance.

Learning Objective 5

E3-27 Identifying the impact of adjusting entries on the financial statements

Austin Acoustics recorded the following transactions during October 2016:

a. Received $2,500 cash from customer for three months of service beginning October 1, 2016, and ending December 31, 2016. The company recorded a $2,500 debit to Cash and a $2,500 credit to Unearned Revenue.

b. Employees are paid $3,000 on Monday following the five-day workweek. October 31, 2016, is on Friday.

c. The company pays $440 on October 1, 2016 for its six-month auto insurance policy. The company recorded a $440 debit to Prepaid Insurance and a $440 credit to Cash.

d. The company purchased office furniture for $8,300 on January 2, 2016. The company recorded a $8,300 debit to Office Furniture and a $8,300 credit to Accounts Payable. Annual depreciation for the furniture is $1,000.

e. The company began October with $50 of office supplies on hand. On October 10, the company purchased office supplies on account of $100. The company recorded a $100 debit to Office Supplies and a $100 credit to Accounts Payable. The company used $120 of office supplies during October.

f. The company received its electric bill on October 30 for $325 but did not pay it until November 10.

g. The company paid November's rent of $2,500 on October 30. On October 30, the company recorded an $2,500 debit to Rent Expense and an $2,500 credit to Cash.

Indicate if an adjusting entry is needed for each item on October 31 for the month of October. Assuming the adjusting entry is not made, indicate which specific category or categories of accounts on the financial statements are misstated and if they are overstated or understated. Use the following table as a guide. Item *a* is completed as an example:

Item	Adjusting Entry Needed?	Specific Category of Accounts on the Balance Sheet	Over / Understated	Specific Category of Accounts on the Income Statement	Over / Understated
(a)	*Yes*	*Liability* *Equity*	*Over* *Under*	*Revenue*	*Under*

E3-28 Journalizing adjusting entries and analyzing their effect on the income statement

Learning Objectives 3, 5

1. d. DR Salaries Expense $10,400

The following data at July 31, 2016, are given for KTR:

a. Depreciation, $200.

b. Prepaid rent expires, $100.

c. Interest expense accrued, $600.

d. Employee salaries owed for Monday through Thursday of a five-day workweek; weekly payroll,

e. Unearned revenue earned, $1,600.

f. Office supplies used, $300.

Requirements

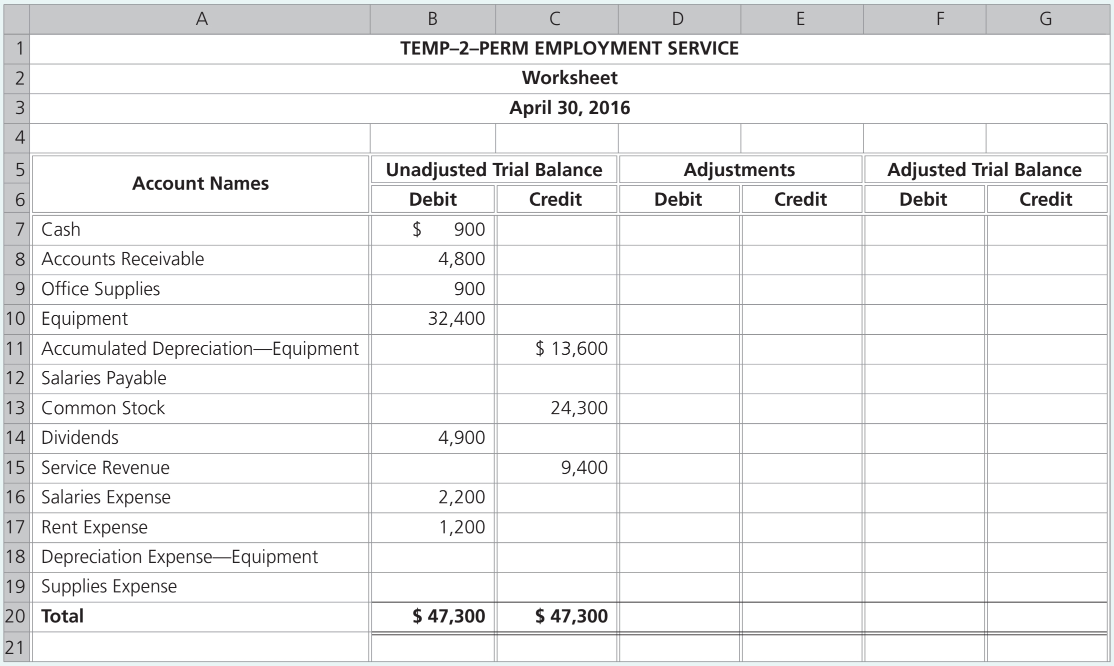
1. Journalize the adjusting entries needed on July 31, 2016.
2. Suppose the adjustments made in Requirement 1 were not made. Compute the overall overstatement or understatement of net income as a result of the omission of these adjustments.

E3-29 Using the worksheet to record the adjusting journal entries

Learning Objective 6

1. Adjustments $3,300 total

The worksheet of Temp–2–Perm Employment Service follows but is incomplete.



	A	B	C	D	E	F	G
1	**TEMP–2–PERM EMPLOYMENT SERVICE**						
2	**Worksheet**						
3	**April 30, 2016**						
4							
5	**Account Names**	**Unadjusted Trial Balance**		**Adjustments**		**Adjusted Trial Balance**	
6		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 900					
8	Accounts Receivable	4,800					
9	Office Supplies	900					
10	Equipment	32,400					
11	Accumulated Depreciation—Equipment		$ 13,600				
12	Salaries Payable						
13	Common Stock		24,300				
14	Dividends	4,900					
15	Service Revenue		9,400				
16	Salaries Expense	2,200					
17	Rent Expense	1,200					
18	Depreciation Expense—Equipment						
19	Supplies Expense						
20	**Total**	**$ 47,300**	**$ 47,300**				
21							

Requirements

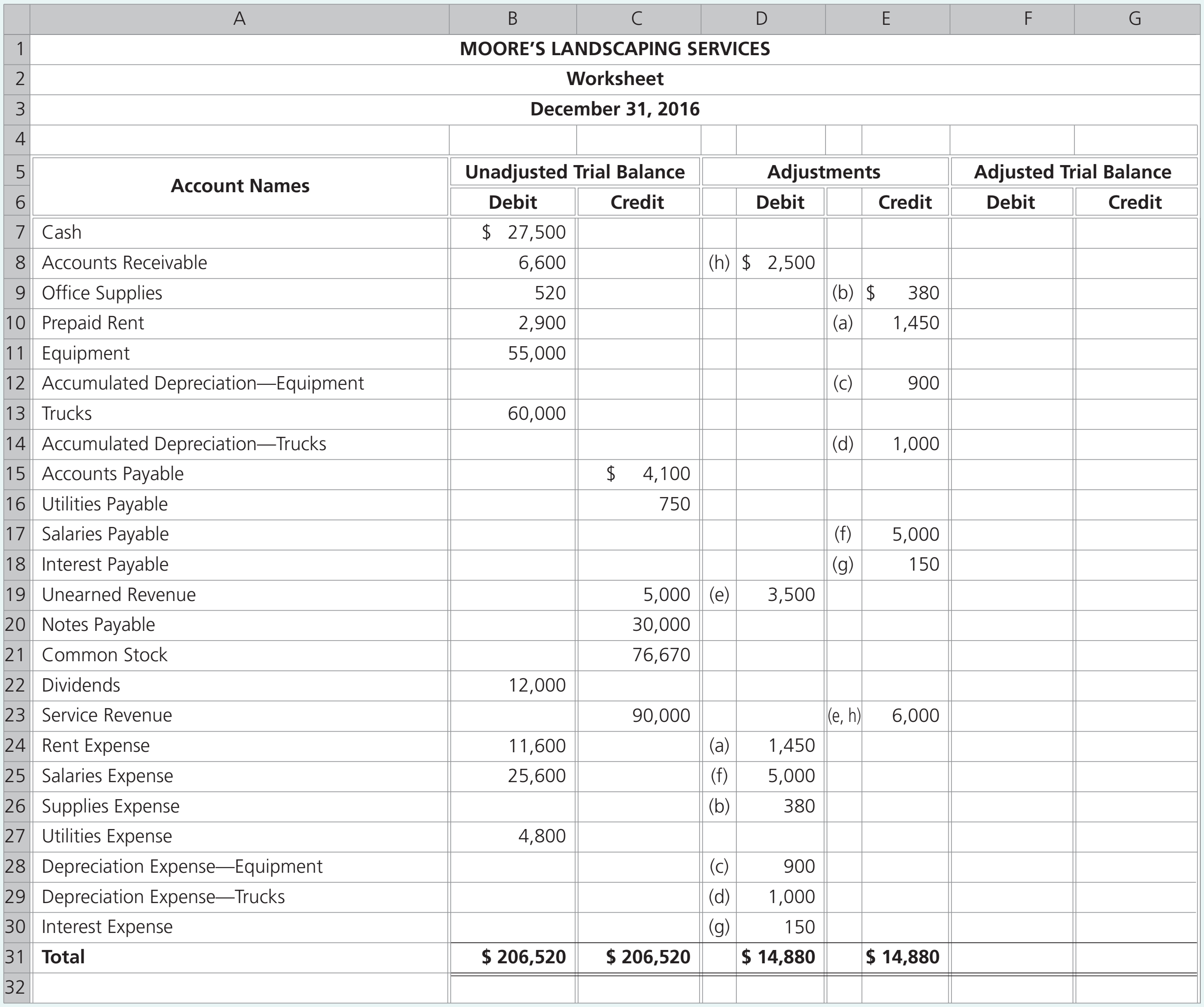
1. Calculate and enter the adjustment amounts directly in the Adjustments columns. Use letters *a* through *d* to label the four adjustments.
2. Prepare each adjusting journal entry calculated in Requirement 1. Date the entries and include explanations.

Learning Objective 6

Adjusted trial balance
$216,070 total

E3-30 Using the worksheet to prepare the adjusted trial balance

The worksheet of Moore's Landscaping Services follows but is incomplete.



	A	B	C	D		E		F	G
1	**MOORE'S LANDSCAPING SERVICES**								
2	**Worksheet**								
3	**December 31, 2016**								
4									
5	**Account Names**	**Unadjusted Trial Balance**		**Adjustments**				**Adjusted Trial Balance**	
6		**Debit**	**Credit**		**Debit**		**Credit**	**Debit**	**Credit**
7	Cash	$ 27,500							
8	Accounts Receivable	6,600		(h)	$ 2,500				
9	Office Supplies	520				(b)	$ 380		
10	Prepaid Rent	2,900				(a)	1,450		
11	Equipment	55,000							
12	Accumulated Depreciation—Equipment					(c)	900		
13	Trucks	60,000							
14	Accumulated Depreciation—Trucks					(d)	1,000		
15	Accounts Payable		$ 4,100						
16	Utilities Payable		750						
17	Salaries Payable					(f)	5,000		
18	Interest Payable					(g)	150		
19	Unearned Revenue		5,000	(e)	3,500				
20	Notes Payable		30,000						
21	Common Stock		76,670						
22	Dividends	12,000							
23	Service Revenue		90,000			(e, h)	6,000		
24	Rent Expense	11,600		(a)	1,450				
25	Salaries Expense	25,600		(f)	5,000				
26	Supplies Expense			(b)	380				
27	Utilities Expense	4,800							
28	Depreciation Expense—Equipment			(c)	900				
29	Depreciation Expense—Trucks			(d)	1,000				
30	Interest Expense			(g)	150				
31	**Total**	**$ 206,520**	**$ 206,520**		**$ 14,880**		**$ 14,880**		
32									

Calculate and enter the adjusted account balances in the Adjusted Trial Balance columns.

E3A-31 Understanding the alternative treatment of prepaid expenses

Learning Objectives 3, 7
Appendix 3A

2. CR Office Supplies $300

At the beginning of the year, office supplies of $800 were on hand. During the year, Rocket Air Conditioning Service paid $6,000 for more office supplies. At the end of the year, Rocket has $500 of office supplies on hand.

Requirements

1. Record the adjusting entry assuming that Rocket records the purchase of office supplies by initially debiting an asset account. Post the adjusting entry to the Office Supplies and Supplies Expense T-accounts. Make sure to include the beginning balance and purchase of office supplies in the Office Supplies T-account.
2. Record the adjusting entry assuming that Rocket records the purchase of office supplies by initially debiting an expense account. Post the adjusting entry to the Office Supplies and Supplies Expense T-accounts. Make sure to include the beginning balance in the Office Supplies T-account and the purchase of office supplies in the Supplies Expense T-account.
3. Compare the ending balances of the T-accounts under both approaches. Are they the same?

E3A-32 Understanding the alternative treatment of unearned revenues

Learning Objectives 3, 7
Appendix 3A

2. DR Service Revenue $200

At the beginning of the year, Dapper Advertising owed customers $2,400 for unearned revenue collected in advance. During the year, Dapper received advance cash receipts of $7,500 and earned $15,000 of service revenue (exclusive of any amount earned from advance payments). At year-end, the liability for unearned revenue is $2,600 and unadjusted service revenue is $15,000.

Requirements

1. Record the adjusting entry assuming that Dapper records the cash receipt of unearned revenue by initially crediting a liability account. Post the adjusting entry to the Unearned Revenue and Service Revenue T-accounts. Make sure to include the beginning balance and additional unearned revenue in the Unearned Revenue T-account.
2. Record the adjusting entry assuming that Dapper records the cash receipt of unearned revenue by initially crediting a revenue account. Post the adjusting entry to the Unearned Revenue and Service Revenue T-accounts. Make sure to include the beginning balance in the Unearned Revenue T-account and the additional unearned revenue in the Service Revenue T-account.
3. Compare the ending balances of the T-accounts under both approaches. Are they the same?

> Problems Group A

Learning Objective 3

1. b. DR Insurance Expense $1,250

P3-33A Journalizing adjusting entries and subsequent journal entries

Lorring Landscaping has collected the following data for the December 31 adjusting entries:

a. Each Friday, Lorring pays employees for the current week's work. The amount of the weekly payroll is $7,500 for a five-day workweek. This year, December 31 falls on a Wednesday. Lorring will pay its employees on January 2.

b. On January 1 of the current year, Lorring purchases an insurance policy that covers two years, $2,500.

c. The beginning balance of Office Supplies was $3,900. During the year, Lorring purchased office supplies for $5,400, and at December 31 the office supplies on hand total $2,600.

d. During December, Lorring designed a landscape plan and the client prepaid $5,000. Lorring recorded this amount as Unearned Revenue. The job will take several months to complete, and Lorring estimates that the company has earned 60% of the total revenue during the current year.

e. At December 31, Lorring had earned $4,500 for landscape services completed for Turnkey Appliances. Turnkey has stated that it will pay Lorring on January 10.

f. Depreciation for the current year includes Equipment, $3,300; and Trucks, $2,100.

g. Lorring has incurred $400 of interest expense on a $900 interest payment due on January 15.

Requirements

1. Journalize the adjusting entry needed on December 31 for each of the items affecting Lorring Landscaping. Assume Lorring records adjusting entries only at the end of the year.
2. Journalize the subsequent journal entries for adjusting entries *a, d,* and *g.*

Learning Objectives 3, 5

1. d. DR Depreciation Expense $8,000

P3-34A Journalizing adjusting entries and identifying the impact on financial statements

Taylor Fishing Charters has collected the following data for the December 31 adjusting entries:

a. The company received its electric bill on December 20 for $225 but will not pay it until January 5. (Use the Utilities Payable account.)

b. Taylor purchased a nine-month boat insurance policy on November 1 for $9,000. Taylor recorded a debit to Prepaid Insurance.

c. As of December 31, Taylor had earned $2,000 of charter revenue that has not been recorded or received.

d. Taylor's fishing boat was purchased on January 1 at a cost of $44,500. Taylor expects to use the boat for five years and that it will have a residual value of $4,500. Determine annual depreciation assuming the straight-line depreciation method is used.

e. On October 1, Taylor received $8,000 prepayment for a deep-sea fishing charter to take place in December. As of December 31, Taylor has completed the charter.

Requirements

1. Journalize the adjusting entries needed on December 31 for Taylor Fishing Charters. Assume Taylor records adjusting entries only at the end of the year.
2. If Taylor had not recorded the adjusting entries, indicate which specific category of accounts on the financial statements would be misstated and if the misstatement is overstated or understated. Use the following table as a guide.

Adjusting Entry	Specific Category of Accounts on the Balance Sheet	Over / Understated	Specific Category of Accounts on the Income Statement	Over / Understated

P3-35A Journalizing and posting adjustments to the T-accounts and preparing an adjusted trial balance

Learning Objectives 3, 4

3. Adjusted trial balance $69,750 total

The unadjusted trial balance of Adveta Air Purification System at December 31, 2016, and the data needed for the adjustments follow.

ADVETA AIR PURIFICATION SYSTEM
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 7,800	
Accounts Receivable	19,800	
Prepaid Rent	2,600	
Office Supplies	1,100	
Equipment	19,900	
Accumulated Depreciation—Equipment		$ 4,100
Accounts Payable		3,000
Salaries Payable		
Unearned Revenue		2,800
Common Stock		39,600
Dividends	9,300	
Service Revenue		15,400
Salaries Expense	3,100	
Rent Expense		
Depreciation Expense—Equipment		
Advertising Expense	1,300	
Supplies Expense		
Total	**$ 64,900**	**$ 64,900**

Adjustment data at December 31 follow:

a. On December 15, Adveta contracted to perform services for a client receiving $2,800 in advance. Adveta recorded this receipt of cash as Unearned Revenue. As of December 31, Adveta has completed $1,800 of the services.

b. Adveta prepaid two months of rent on December 1.

c. Adveta used $600 of office supplies.

d. Depreciation for the equipment is $700.

e. Adveta received a bill for December's online advertising, $1,000. Adveta will not pay the bill until January. (Use Accounts Payable.)

f. Adveta pays its employees on Monday for the previous week's wages. Its employees earn $1,500 for a five-day workweek. December 31 falls on Wednesday this year.

g. On October 1, Adveta agreed to provide a four-month air system check (beginning October 1) for a customer for $3,000. Adveta has completed the system check every month, but payment has not yet been received and no entries have been made.

Requirements

1. Journalize the adjusting entries on December 31.
2. The T-accounts, along with their unadjusted balances have been opened for you. Post the adjusting entries to the T-accounts.
3. Prepare the adjusted trial balance.
4. How will Adveta Air Purification System use the adjusted trial balance?

Learning Objectives 3, 4

3. Adjusted trial balance $555,220 total

P3-36A Journalizing and posting adjustments to the four-column accounts and preparing an adjusted trial balance

The unadjusted trial balance of Lexington Inn Company at December 31, 2016, and the data needed for the adjustments follow.

LEXINGTON INN COMPANY
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 11,900	
Accounts Receivable	13,900	
Prepaid Insurance	3,500	
Office Supplies	1,100	
Building	515,000	
Accumulated Depreciation—Building		$ 350,000
Accounts Payable		4,500
Salaries Payable		
Unearned Revenue		2,500
Common Stock		175,620
Dividends	2,170	
Service Revenue		18,200
Salaries Expense	2,500	
Insurance Expense		
Depreciation Expense—Building		
Advertising Expense	750	
Supplies Expense		
Total	**$ 550,820**	**$ 550,820**

Adjustment data at December 31 follow:

a. As of December 31, Lexington had $600 of Prepaid Insurance remaining.

b. At the end of the month, Lexington had $700 of office supplies remaining.

c. Depreciation on the building is $3,500.

d. Lexington pays its employees weekly on Friday. Its employees earn $1,500 for a five-day workweek. December 31 falls on Wednesday this year.

e. On November 20, Lexington contracted to perform services for a client receiving $2,500 in advance. Lexington recorded this receipt of cash as Unearned Revenue. As of December 31, Lexington has $1,500 still unearned.

Requirements

1. Journalize the adjusting entries on December 31.
2. The four-column ledger accounts have been opened for you using the unadjusted trial balance adjusting entries to the ledger accounts.
3. Prepare the adjusted trial balance.
4. Assuming the adjusted trial balance has total debits equal to total credits, does this mean that entries have been recorded correctly? Explain.

P3-37A Using the worksheet to record the adjusting journal entries

Learning Objective 6

2. d. CR Accumulated Depreciation $3,800

Gullo Theater Production Company's partially completed worksheet as of December 31, 2016, follows.

	A	B	C	D	E	F	G
1	**GULLO THEATER PRODUCTION COMPANY**						
2	**Worksheet**						
3	**December 31, 2016**						
4							
5	**Account Names**	**Unadjusted Trial Balance**		**Adjustments**		**Adjusted Trial Balance**	
6		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 3,600					
8	Accounts Receivable	5,800					
9	Office Supplies	1,900					
10	Prepaid Insurance	1,050					
11	Equipment	32,000					
12	Accumulated Depreciation—Equipment		$ 7,400				
13	Accounts Payable		4,800				
14	Salaries Payable						
15	Common Stock		14,650				
16	Dividends	27,000					
17	Service Revenue		74,000				
18	Depreciation Expense—Equipment						
19	Supplies Expense						
20	Utilities Expense	4,500					
21	Salaries Expense	25,000					
22	Insurance Expense						
23	**Total**	**$ 100,850**	**$ 100,850**				
24							

Requirements

1. Analyze the worksheet to determine the adjusting entries that account for the differences between the unadjusted trial balance and the adjusted trial balance. Complete the worksheet. Use letters *a* through *e* to label the five adjustments.
2. Journalize the adjusting entries.

Learning Objectives 3, 7
Appendix 3A

4. Dec 31, CR Insurance Expense $7,500

P3A-38A Understanding the alternative treatment of prepaid expenses and unearned revenues

Night Flyer Pack'n Mail completed the following transactions during 2016:

Nov. 1	Paid $2,000 store rent covering the four-month period ending February 28, 2017.
Nov. 1	Paid $12,500 insurance covering the five-month period ending March 31, 2017.
Dec. 1	Collected $4,500 cash in advance from customers. The service revenue will be earned $1,500 monthly over the three-month period ending February 28, 2017.
Dec. 1	Collected $9,000 cash in advance from customers. The service revenue will be earned $1,800 monthly over the five-month period ending April 30, 2017.

Requirements

1. Journalize the transactions assuming that Night Flyer debits an asset account for prepaid expenses and credits a liability account for unearned revenues.
2. Journalize the related adjusting entries at December 31, 2016.
3. Post the journal and adjusting entries to the T-accounts, and show their balances at December 31, 2016. (Ignore the Cash account.)
4. Repeat Requirements 1–3. This time, debit an expense account for prepaid expenses and credit a revenue account for unearned revenues.
5. Compare the account balances in Requirements 3 and 4. They should be equal.

> Problems Group B

Learning Objective 3

1. b. DR Insurance Expense $2,000

P3-39B Journalizing adjusting entries and subsequent journal entries

Laughton Landscaping has collected the following data for the December 31 adjusting entries:

- **a.** Each Friday, Laughton pays employees for the current week's work. The amount of the weekly payroll is $6,000 for a five-day workweek. This year, December 31 falls on a Tuesday. Laughton will pay its employees on January 3.
- **b.** On January 1 of the current year, Laughton purchases an insurance policy that covers two years, $4,000.
- **c.** The beginning balance of Office Supplies was $4,100. During the year, Laughton purchased office supplies for $5,500, and at December 31 the office supplies on hand total $2,200.
- **d.** During December, Laughton designed a landscape plan and the client prepaid $4,000. Laughton recorded this amount as Unearned Revenue. The job will take several months to complete, and Laughton estimates that the company has earned 50% of the total revenue during the current year.
- **e.** At December 31, Laughton had earned $4,500 for landscape services completed for Tomball Appliances. Tomball has stated that it will pay Laughton on January 10.
- **f.** Depreciation for the current year includes Equipment, $3,000; and Trucks, $1,700.
- **g.** Laughton has incurred $800 of interest expense on a $1,200 interest payment due on January 15.

Requirements

1. Journalize the adjusting entry needed on December 31 for each of the items affecting Laughton Landscaping. Assume Laughton records adjusting entries only at the end of the year.
2. Journalize the subsequent journal entries for adjusting entries *a, d,* and *g.*

P3-40B Journalizing adjusting entries and identifying the impact on financial statements

Learning Objectives 3, 5

1. d. DR Depreciation Expense $15,000

Stewart Fishing Charters has collected the following data for the December 31 adjusting entries:

a. The company received its electric bill on December 20 for $150 but will not pay it until January 5. (Use the Utilities Payable account.)

b. Stewart purchased a nine-month boat insurance policy on November 1 for $8,100. Stewart recorded a debit to Prepaid Insurance.

c. As of December 31, Stewart had earned $4,000 of charter revenue that has not been recorded or received.

d. Stewart's fishing boat was purchased on January 1 at a cost of $80,500. Stewart expects to use the boat for five years and that it will have a residual value of $5,500. Determine annual depreciation assuming the straight-line depreciation method is used.

e. On October 1, Stewart received $5,000 prepayment for a deep-sea fishing charter to take place in December. As of December 31, Stewart has completed the charter.

Requirements

1. Journalize the adjusting entries needed on December 31 for Stewart Fishing Charters. Assume Stewart records adjusting entries only at the end of the year.
2. If Stewart had not recorded the adjusting entries, indicate which specific category of accounts on the financial statements would be misstated and if the misstatement is overstated or understated.

Adjusting Entry	Specific Category of Accounts on the Balance Sheet	Over / Understated	Specific Category of Accounts on the Income Statement	Over / Understated

Learning Objectives 3, 4

3. Adjusted trial balance $71,700 total

P3-41B Journalizing and posting adjustments to the T-accounts and preparing an adjusted trial balance

The unadjusted trial balance of Avery Air Purification System at December 31, 2016, and the data needed for the adjustments follow.

AVERY AIR PURIFICATION SYSTEM
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 7,400	
Accounts Receivable	19,300	
Prepaid Rent	2,700	
Office Supplies	1,100	
Equipment	20,000	
Accumulated Depreciation—Equipment		$ 4,000
Accounts Payable		3,100
Salaries Payable		
Unearned Revenue		2,600
Common Stock		40,100
Dividends	9,900	
Service Revenue		15,400
Salaries Expense	3,400	
Rent Expense		
Depreciation Expense—Equipment		
Advertising Expense	1,400	
Supplies Expense		
Total	**$ 65,200**	**$ 65,200**

Adjustment data at December 31 follow:

a. On December 15, Avery contracted to perform services for a client receiving $2,600 in advance. Avery recorded this receipt of cash as Unearned Revenue. As of December 31, Avery has completed $1,200 of the services.

b. Avery prepaid two months of rent on December 1.

c. Avery used $650 of office supplies during the month.

d. Depreciation for the equipment is $500.

e. Avery received a bill for December's online advertising, $600. Avery will not pay the bill until January. (Use Accounts Payable.)

f. Avery pays its employees weekly on Monday for the previous week's wages. Its employees earn $5,500 for a five-day workweek. December 31 falls on Wednesday this year.

g. On October 1, Avery agreed to provide a four-month air system check (beginning October 1) for a customer for $2,800. Avery has completed the system check every month, but payment has not yet been received and no entries have been made.

Requirements

1. Journalize the adjusting entries on December 31.
2. The T-accounts, along with their unadjusted balances have been opened for you. Post the adjusting entries to the T-accounts.
3. Prepare the adjusted trial balance.
4. How will Avery Air Purification System use the adjusted trial balance?

P3-42B Journalizing and posting adjustments to the four-column accounts and preparing an adjusted trial balance

Learning Objectives 3, 4

3. Adjusted trial balance $566,330 total

The unadjusted trial balance of Pikeville Inn Company at December 31, 2016, and the data needed for the adjustments follow.

PIKEVILLE INN COMPANY
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 11,200	
Accounts Receivable	14,600	
Prepaid Insurance	4,600	
Office Supplies	700	
Building	525,000	
Accumulated Depreciation—Building		$ 240,000
Accounts Payable		2,400
Salaries Payable		
Unearned Revenue		1,600
Common Stock		300,530
Dividends	1,550	
Service Revenue		17,100
Salaries Expense	3,100	
Insurance Expense		
Depreciation Expense—Building		
Advertising Expense	880	
Supplies Expense		
Total	**$ 561,630**	**$ 561,630**

Adjustment data at December 31 follow:

a. As of December 31, Pikeville Inn had $500 of Prepaid Insurance remaining.

b. At the end of the month, Pikeville Inn had $400 of office supplies remaining.

c. Depreciation on the building is $4,100.

d. Pikeville Inn pays its employees on Friday for the weekly salaries. Its employees earn $1,000 for a five-day workweek. December 31 falls on Wednesday this year.

e. On November 20, Pikeville Inn contracted to perform services for a client receiving $1,600 in advance. Pikeville Inn recorded this receipt of cash as Unearned Revenue. As of December 31, Pikeville Inn has $1,100 still unearned.

Requirements

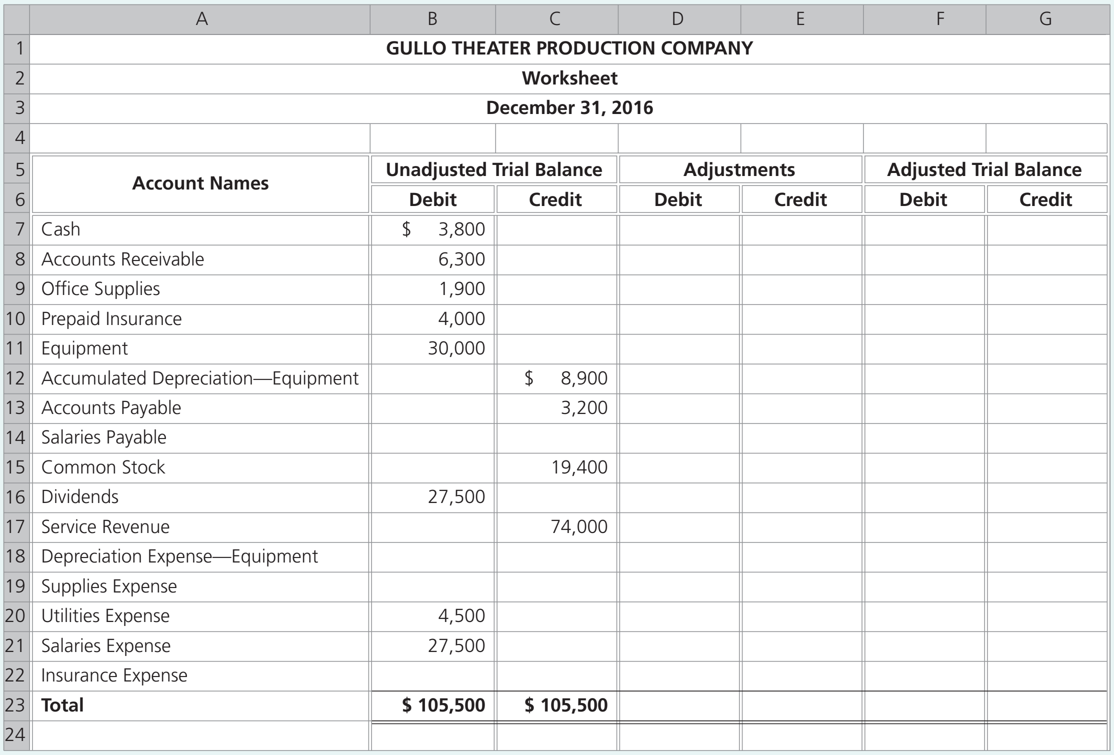
1. Journalize the adjusting entries on December 31.
2. The four-column ledger accounts have been opened for you using the unadjusted trial balance adjusting entries to the ledger accounts.
3. Prepare the adjusted trial balance.
4. Assuming the adjusted trial balance has total debits equal to total credits, does this mean that entries have been recorded correctly? Explain.

Learning Objective 6

2. d. CR Accumulated Depreciation $4,000

P3-43B Using the worksheet to record the adjusting journal entries

Gullo Theater Production Company's partially completed worksheet as of December 31, 2016, follows.



	A	B	C	D	E	F	G
1	**GULLO THEATER PRODUCTION COMPANY**						
2	**Worksheet**						
3	**December 31, 2016**						
4							
5	**Account Names**	**Unadjusted Trial Balance**		**Adjustments**		**Adjusted Trial Balance**	
6		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 3,800					
8	Accounts Receivable	6,300					
9	Office Supplies	1,900					
10	Prepaid Insurance	4,000					
11	Equipment	30,000					
12	Accumulated Depreciation—Equipment		$ 8,900				
13	Accounts Payable		3,200				
14	Salaries Payable						
15	Common Stock		19,400				
16	Dividends	27,500					
17	Service Revenue		74,000				
18	Depreciation Expense—Equipment						
19	Supplies Expense						
20	Utilities Expense	4,500					
21	Salaries Expense	27,500					
22	Insurance Expense						
23	**Total**	**$ 105,500**	**$ 105,500**				
24							

Requirements

1. Analyze the worksheet to determine the adjusting entries that account for the differences between the unadjusted trial balance and the adjusted trial balance. Complete the worksheet. Use letters *a* through *e* to label the five adjustments.
2. Journalize the adjusting entries.

P3A-44B Understanding the alternative treatment of prepaid expenses and unearned revenues

Learning Objectives 3, 7
Appendix 3A

4. Dec 31, CR Insurance Expense $6,400

Speedy Pack'n Mail completed the following transactions during 2016:

Nov. 1	Paid $5,200 store rent covering the four-month period ending February 28, 2017.
1	Paid $9,600 insurance covering the six-month period ending April 30, 2017.
Dec. 1	Collected $5,400 cash in advance from customers. The service revenue will be earned $1,800 monthly over the three-month period ending February 28, 2017.
1	Collected $10,000 cash in advance from customers. The service revenue will be earned $2,000 monthly over the five-month period ending April 30, 2017.

Requirements

1. Journalize the transactions assuming that Speedy Pack'n Mail debits an asset account for prepaid expenses and credits a liability account for unearned revenues.
2. Journalize the related adjusting entries at December 31, 2016.
3. Post the journal and adjusting entries to the T-accounts, and show their balances at December 31, 2016. (Ignore the Cash account.)
4. Repeat Requirements 1–3. This time debit an expense account for prepaid expenses and credit a revenue account for unearned revenues.
5. Compare the account balances in Requirements 3 and 4. They should be equal.

> Continuing Problem

P3-45 Preparing adjusting entries and preparing an adjusted trial balance

This problem continues the Daniels Consulting situation from Problem P2-41 of Chapter 2. You will need to use the unadjusted trial balance and posted T-accounts that you prepared in Problem P2-41. The unadjusted trial balance at December 31, 2016, is duplicated below:

DANIELS CONSULTING
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 17,950	
Accounts Receivable	2,100	
Office Supplies	800	
Equipment	3,600	
Furniture	3,000	
Accounts Payable		$ 3,600
Unearned Revenue		2,400
Common Stock		20,000
Dividends	1,000	
Service Revenue		4,600
Rent Expense	2,000	
Utilities Expense	150	
Total	**$ 30,600**	**$ 30,600**

At December 31, the business gathers the following information for the adjusting entries:

a. Accrued service revenue, $1,500.

b. Earned $600 of the service revenue collected in advance on December 21.

c. Office supplies on hand, $300.

d. Depreciation on equipment, $60; Depreciation on furniture, $50.

e. Accrued $685 expense for administrative assistant's salary.

Requirements

1. Journalize and post the adjusting entries using the T-accounts that you completed in Problem P2-41. In the T-accounts, denote each adjusting amount as *Adj.* and an account balance as *Balance.*
2. Prepare an adjusted trial balance as of December 31, 2016.

> Practice Set

P3-46 Preparing adjusting entries and preparing an adjusted trial balance

This problem continues the Crystal Clear Cleaning situation from Problem P2-42 of Chapter 2. Start from the unadjusted trial balance that Crystal Clear Cleaning prepared at November 30, 2017:

CRYSTAL CLEAR CLEANING
Unadjusted Trial Balance
November 30, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$138,150	
Accounts Receivable	2,600	
Cleaning Supplies	220	
Prepaid Rent	2,000	
Prepaid Insurance	1,800	
Equipment	3,200	
Truck	7,000	
Accounts Payable		$ 1,470
Unearned Revenue		12,000
Notes Payable		96,000
Common Stock		42,000
Dividends	200	
Service Revenue		4,800
Salaries Expense	350	
Advertising Expense	500	
Utilities Expense	250	
Total	**$156,270**	**$156,270**

Consider the following adjustment data:

a. Cleaning supplies on hand at the end of November were $30.

b. One month's combined depreciation on all depreciable assets was estimated to be $270.

c. One month's interest expense is $240.

Requirements

1. Using the data provided from the trial balance, the previous adjustment information, and the information from Chapter 2 (P2-42), prepare all required adjusting journal entries at November 30.
2. Prepare an adjusted trial balance as of November 30 for Crystal Clear Cleaning.

CRITICAL THINKING

> Decision Case 3-1

One year ago, Tyler Stasney founded Swift Classified Ads. Stasney remembers that you took an accounting course while in college and comes to you for advice. He wishes to know how much net income his business earned during the past year in order to decide whether to keep the company going. His accounting records consist of the T-accounts from his ledger, which were prepared by an accountant who moved to another city. The ledger at December 31 follows. The accounts have *not* been adjusted.

Cash

Dec. 31	5,800		

Accounts Receivable

Dec. 31	12,000		

Prepaid Rent

Jan. 2	2,800		

Office Supplies

Jan. 2	2,600		

Equipment

Jan. 2	36,000		

Accumulated Depreciation—Equipment

Accounts Payable

		21,500	Dec. 31

Unearned Revenue

		4,000	Dec. 31

Salaries Payable

Common Stock

		20,000	Dec. 31

Dividends

Dec. 31	28,000		

Service Revenue

		59,500	Dec. 31

Salaries Expense

Dec. 31	17,000		

Depreciation Expense—Equipment

Rent Expense

Utilities Expense

Dec. 31	800		

Supplies Expense

Stasney indicates that at year-end, customers owe the business $1,600 for accrued service revenue. These revenues have not been recorded. During the year, Swift Classified Ads collected $4,000 service revenue in advance from customers, but the business earned only $900 of that amount. Rent expense for the year was $2,400, and the business used up $1,700 of the supplies. Swift determines that depreciation on its equipment was $5,000 for the year. At December 31, the business owes an employee $1,200 accrued salary.

Help Swift Classified Ads compute its net income for the year. Advise Stasney whether to continue operating Swift Classified Ads.

> Ethical Issue 3-1

The net income of Steinbach & Sons, a landscaping company, decreased sharply during 2016. Mort Steinbach, owner and manager of the company, anticipates the need for a bank loan in 2017. Late in 2016, Steinbach instructs the company's accountant to record $2,000 service revenue for landscape services for the Steinbach family, even though the services will not be performed until January 2017. Steinbach also tells the accountant *not* to make the following December 31, 2016, adjusting entries:

Salaries owed to employees	$ 900
Prepaid insurance that has expired	400

Requirements

1. Compute the overall effects of these transactions on the company's reported net income for 2016.
2. Why is Steinbach taking this action? Is his action ethical? Give your reason, identifying the parties helped and the parties harmed by Steinbach's action.
3. As a personal friend, what advice would you give the accountant?

> Fraud Case 3-1

XM, Ltd. was a small engineering firm that built high-tech robotic devices for electronics manufacturers. One very complex device was partially completed at the end of 2016. Barb McLauren, head engineer, knew the experimental technology was a failure and XM would not be able to complete the $20,000,000 contract next year. However, the corporation was getting ready to be sold in January. She told the controller that the device was 80% complete at year-end and on track for successful completion the following spring; the controller accrued 80% of the contract revenue at December 31, 2016. McLauren sold the company in January 2017 and retired. By mid-year, it became apparent that XM would not be able to complete the project successfully and the new owner would never recoup his investment.

Requirements

1. For complex, high-tech contracts, how does a company determine the percentage of completion and the amount of revenue to accrue?
2. What action do you think was taken by XM in 2017 with regard to the revenue that had been accrued the previous year?

> Financial Statement Case 3-1

Starbucks Corporation—like all other businesses—makes adjusting entries at year-end in order to measure assets, liabilities, revenues, and expenses properly. Examine Starbucks Corporation's Balance Sheet and Income Statement. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's Fiscal 2013 Annual Report.

Requirements

1. Which asset accounts might Starbucks record adjusting entries for?
2. Which liability accounts might Starbucks record adjusting entries for?
3. Review Note 1 (Property, Plant, and Equipment) in the Notes to Consolidated Financial Statements. How are property, plant, and equipment carried on the balance sheet? How is depreciation of these assets calculated? What is the range of useful lives used when depreciating these assets?

> Communication Activity 3-1

In 75 words or fewer, explain adjusting journal entries.

> Quick Check Answers

1. a **2.** a **3.** b **4.** c **5.** a **6.** a **7.** b **8.** d **9.** c **10A.** b

Completing the Accounting Cycle

4

It's the End of the Year, Now What?

The Bear Paw Inn just celebrated its one-year corporate anniversary. Christina Merthieu, the majority stockholder and manager, is excited that she has one year of experience working for a successful business. Although her previous job of working as a resort manager has helped her in dealing with customers, she has had to learn a lot about the accounting side of the business. Christina attributes her first-year success to always offering exceptional quality and personal service to her customers. In addition, Christina found a great accountant who has been helping her with the books.

From the beginning, Christina relied on her accountant to provide advice about recording transactions throughout the year. Now that the first year of business has been completed, she is ready to perform the final accounting tasks of the year. The corporation's accountant has told her that she can now prepare financial statements to help her evaluate the inn's profit for the year and its financial position. Bear Paw Inn will use those financial statements to assess the business's performance over the past year. The business is also ready to start the next year of business, and in order to do this, Christina must get the books ready for next year by recording closing entries.

What Happens at Year-End?

As we saw with Christina and the Bear Paw Inn, businesses have special tasks that have to be completed at the end of the accounting cycle. These tasks help the business in evaluating the past year's operations and also prepare the business to start a new year. For example, Four Seasons Hotels and Resorts must prepare annual financial statements that report on the business's profit or loss for the year and its financial position at the end of the year. In addition, Four Seasons must prepare its books for next year—a process that is called closing the books, which consists of journalizing closing entries and updating the Retained Earnings account for the year. These final tasks in the accounting cycle are what you learn about in this chapter.

Chapter 4 Learning Objectives

1. Prepare the financial statements including the classified balance sheet
2. Use the worksheet to prepare financial statements
3. Explain the purpose of, journalize, and post closing entries
4. Prepare the post-closing trial balance
5. Describe the accounting cycle
6. Use the current ratio to evaluate business performance
7. Explain the purpose of, journalize, and post reversing entries (Appendix 4A)

In Chapter 3, our fictitious company, Smart Touch Learning, had completed the adjusting entries necessary to properly measure net income on the income statement and assets and liabilities on the balance sheet. Now that its accounts are up to date, Smart Touch Learning is ready to take the next step in the accounting cycle—preparing the financial statements. In this chapter, you review the financial statements that you have already learned about and learn how to prepare a more complete version of the balance sheet. In addition, you complete the accounting cycle by learning how to close the books.

HOW DO WE PREPARE FINANCIAL STATEMENTS?

Learning Objective 1

Prepare the financial statements including the classified balance sheet

The financial statements of Smart Touch Learning are prepared from the adjusted trial balance, which you learned in Chapter 3. Exhibit 4-1 shows the adjusted trial balance for Smart Touch Learning. In the right margin of the exhibit, we see how the accounts are distributed to the financial statements.

As always, the financial statements should be prepared in the following order:

1. **Income statement**—reports revenues and expenses and calculates net income or net loss for the time period.
2. **Statement of retained earnings**—shows how retained earnings changed during the period due to net income (or net loss) and dividends.
3. **Balance sheet**—reports assets, liabilities, and stockholders' equity as of the last day of the period.

IFRS

Following IFRS, companies must present a statement of profit or loss (income statement), statement of financial position (balance sheet), statement of changes in equity (similar to statement of retained earnings) and statement of cash flows—the same as U.S. companies. Yet the statements may look quite different. Revenue may be called "Turnover," and Net Income may be called "Profit." On the balance sheet, assets and liabilities are presented in a different order. Cash is often one of the last assets listed.

Exhibit 4-1 | **Adjusted Trial Balance**

SMART TOUCH LEARNING
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 12,200	
Accounts Receivable	1,800	
Office Supplies	100	
Prepaid Rent	2,000	
Furniture	18,000	
Accumulated Depreciation—Furniture		$ 300
Building	60,000	
Accumulated Depreciation—Building		250
Land	20,000	
Accounts Payable		200
Utilities Payable		100
Salaries Payable		1,200
Interest Payable		100
Unearned Revenue		400
Notes Payable		60,000
Common Stock		48,000
Dividends	5,000	
Service Revenue		17,500
Rent Expense	3,000	
Salaries Expense	4,800	
Supplies Expense	400	
Utilities Expense	100	
Depreciation Expense—Furniture	300	
Depreciation Expense—Building	250	
Interest Expense	100	
Total	**$ 128,050**	**$ 128,050**

3. Balance Sheet Accounts

2. Statement of Retained Earnings Account

1. Income Statement Accounts

The financial statements for Smart Touch Learning are presented in Exhibit 4-2 (on the next page).

Relationships Among the Financial Statements

The arrows in Exhibit 4-2 (on the next page) show how the financial statements relate to each other.

1. Net income from the income statement increases Retained Earnings. A net loss decreases Retained Earnings.
2. Ending Retained Earnings from the statement of retained earnings goes to the balance sheet and makes total liabilities plus total stockholders' equity equal total assets, satisfying the accounting equation.

To solidify your understanding of these relationships, trace net income from the income statement to the statement of retained earnings. Then trace ending Retained Earnings

Exhibit 4-2 Smart Touch Learning Financial Statements

SMART TOUCH LEARNING
Income Statement
Two Months Ended December 31, 2016

Revenues:		
Service Revenue		$ 17,500
Expenses:		
Salaries Expense	$ 4,800	
Rent Expense	3,000	
Supplies Expense	400	
Depreciation Expense—Furniture	300	
Depreciation Expense—Building	250	
Utilities Expense	100	
Interest Expense	100	
Total Expenses		8,950
Net Income		**$ 8,550**

1

SMART TOUCH LEARNING
Statement of Retained Earnings
Two Months Ended December 31, 2016

Retained Earnings, November 1, 2016	$ 0
Net income for the two months	8,550
	8,550
Dividends	(5,000)
Retained Earnings, December 31, 2016	**$ 3,550**

2

SMART TOUCH LEARNING
Balance Sheet
December 31, 2016

Assets			**Liabilities**	
Cash		$ 12,200	Accounts Payable	$ 200
Accounts Receivable		1,800	Utilities Payable	100
Office Supplies		100	Salaries Payable	1,200
Prepaid Rent		2,000	Interest Payable	100
Furniture	$ 18,000		Unearned Revenue	400
Less: Acc. Depr.—Furniture	(300)	17,700	Notes Payable	60,000
Building	60,000		Total Liabilities	62,000
Less: Acc. Depr.—Building	(250)	59,750		
Land		20,000	**Stockholders' Equity**	
			Common Stock	48,000
			Retained Earnings	3,550
			Total Stockholders' Equity	51,550
Total Assets		**$ 113,550**	Total Liabilities and Stockholders' Equity	**$ 113,550**

to the balance sheet. Note that these are the three main financial statements you learned about in the first chapter. They are always prepared in the order described previously: income statement, then statement of retained earnings, and then balance sheet.

Classified Balance Sheet

So far we have presented the *unclassified* balance sheet of Smart Touch Learning. We are now ready for the balance sheet that is actually used in practice—called a **classified balance sheet**. In a classified balance sheet, each asset and each liability are placed into a specific category or classification.

In a classified balance sheet, assets are shown in order of liquidity and liabilities are classified as either *current* (within one year) or *long-term* (more than one year). **Liquidity**

Classified Balance Sheet
A balance sheet that places each asset and each liability into a specific category.

Liquidity
A measure of how quickly an item can be converted to cash.

measures how quickly and easily an account can be converted to cash (because cash is the most liquid asset). Accounts Receivable are relatively liquid because receivables are collected quickly. Office Supplies are less liquid, and Furniture and Buildings are even less so because they take longer to convert to cash or to be used up.

Assets

The balance sheet lists assets in order of liquidity. A classified balance sheet reports two asset categories: *current assets* and *long-term assets*.

Current assets will be converted to cash, sold, or used up during the next 12 months or within the business's operating cycle if the cycle is longer than a year. The **operating cycle** is the time span when

1. Cash is used to acquire goods and services.
2. These goods and services are sold to customers.
3. The business collects cash from customers.

For most businesses, the operating cycle is a few months. Cash, Accounts Receivable, Office Supplies, and Prepaid Expenses are examples of current assets.

Long-term assets are all the assets that will not be converted to cash or used up within the business's operating cycle or one year, whichever is greater. Long-term assets are typically made up of three categories: long-term investments, plant assets, and intangible assets.

Long-Term Investments Notes Receivable and other investments that are held long-term are considered **long-term investments** and include investments in bonds or stocks in which the company intends to hold for longer than one year.

Plant Assets Another category of long-term assets is **plant assets** (also called *fixed assets* or *property, plant, and equipment*). Land, Buildings, Furniture, and Equipment used in operations are plant assets. Plant assets are also presented in order of liquidity, with assets such as Furniture and Equipment being presented first and Land presented last.

Intangible Assets Assets with no physical form are **intangible assets**. Examples of intangible assets include Patents, Copyrights, and Trademarks. Intangible assets are long-term assets that convey special rights, such as the exclusive right to produce or sell an invention (patent) or book (copyright) or the symbol or image of a distinctive brand (trademark).

Liabilities

The balance sheet lists liabilities in the order in which they must be paid. The two liability categories reported on the balance sheet are *current liabilities* and *long-term liabilities*.

Current liabilities must be paid either with cash or with goods and services within one year or within the entity's operating cycle if the cycle is longer than a year. Accounts Payable, Notes Payable due within one year, Salaries Payable, Interest Payable, and Unearned Revenue are all current liabilities. Any portion of a long-term liability that is due within the next year is also reported as a current liability. Current liabilities are listed in the order that they are due.

Long-term liabilities are all liabilities that do not need to be paid within one year or within the entity's operating cycle, whichever is longer. Many Notes Payable are long-term, such as a mortgage on a building.

Stockholders' Equity

Stockholders' equity represents the stockholders' claims to the assets of the business. The stockholders' equity section reported on the balance sheet is in part transferred from the ending Retained Earnings balance on the statement of retained earnings. The equity balance also reflects the stockholders' contributions through common stock. It represents the amount of assets that is left over after the corporation has paid its liabilities.

Current Asset
An asset that is expected to be converted to cash, sold, or used up during the next 12 months or within the business's normal operating cycle if the cycle is longer than a year.

Operating Cycle
The time span during which cash is paid for goods and services, which are then sold to customers from whom the business collects cash.

Long-Term Asset
An asset that will not be converted to cash or used up within the business's operating cycle or one year, whichever is greater.

Long-Term Investment
Investments in bonds (debt securities) or stocks (equity securities) in which the company intends to hold the investment for longer than one year.

Plant Asset
Long-lived, tangible asset, such as land, buildings, and equipment, used in the operation of a business.

Intangible Asset
An asset with no physical form that is valuable because of the special rights it carries.

Current Liability
A liability that must be paid with cash or with goods and services within one year or within the entity's operating cycle if the cycle is longer than a year.

Long-Term Liability
A liability that does not need to be paid within one year or within the entity's operating cycle, whichever is longer.

Exhibit 4-3 presents Smart Touch Learning's classified balance sheet. Notice that the company classifies each asset and each liability as either current or long-term, and that the total assets of $113,550 is the same as the total assets on the unclassified balance sheet in Exhibit 4-2.

Compare the balance sheet in Exhibit 4-3 with the balance sheet in Exhibit 4-2. You'll notice two differences. Exhibit 4-3 is a classified balance sheet, but it is also in a different format than Exhibit 4-2. The balance sheet in Exhibit 4-3 is being presented in the *report form*, which lists the assets at the top and liabilities and stockholders' equity below. Smart Touch Learning's balance sheet in Exhibit 4-2 lists the assets on the left and the liabilities and the stockholders' equity on the right in an arrangement known as the *account form*. Although either form is acceptable, the *report form* is more popular.

Exhibit 4-3 | **Classified Balance Sheet**

SMART TOUCH LEARNING
Balance Sheet
December 31, 2016

Assets			
Current Assets:			
Cash		$ 12,200	
Accounts Receivable		1,800	
Office Supplies		100	
Prepaid Rent		2,000	
Total Current Assets			$ 16,100
Plant Assets:			
Furniture	$ 18,000		
Less: Accumulated Depreciation—Furniture	(300)	17,700	
Building	60,000		
Less: Accumulated Depreciation—Building	(250)	59,750	
Land		20,000	
Total Plant Assets			97,450
Total Assets			**$ 113,550**
Liabilities			
Current Liabilities:			
Accounts Payable		$ 200	
Utilities Payable		100	
Salaries Payable		1,200	
Interest Payable		100	
Unearned Revenue		400	
Total Current Liabilities			$ 2,000
Long-term Liabilities:			
Notes Payable			60,000
Total Liabilities			62,000
Stockholders' Equity			
Common Stock		48,000	
Retained Earnings		3,550	
Total Stockholders' Equity			51,550
Total Liabilities and Stockholders' Equity			**$ 113,550**

This classified balance sheet only includes two asset categories: Current Assets and Plant Assets. Other categories that could be included in a company's asset section are Long-Term Investments and Intangible Assets.

Try It!

For each account listed, identify the category in which it would appear on a classified balance sheet.

1. Patents
2. Mortgage Payable (due in five years)
3. Land
4. Office Supplies
5. Unearned Revenue
6. Investments in stock of another company held long-term
7. Accumulated Depreciation—Furniture

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S4-1 through S4-5. MyAccountingLab

HOW COULD A WORKSHEET HELP IN PREPARING FINANCIAL STATEMENTS?

Learning Objective 2
Use the worksheet to prepare financial statements

Previously you learned how a worksheet can be used to help prepare adjusting entries. Now you'll learn how the worksheet can be used to help in the preparation of financial statements. Exhibit 4-4 (on the next page) shows the completed worksheet for Smart Touch Learning. Sections 1 through 4 of the worksheet, shown with a purple background, were completed in Chapter 3. You are now ready to complete the remaining sections that will help in preparing the financial statements.

Section 5—Income Statement

The income statement section includes only revenue and expense accounts. The revenues and expenses from the adjusted trial balance section will be transferred into the appropriate column in the income statement section. For example, the $17,500 credit balance for Service Revenue in the adjusted trial balance section will be carried over into the credit column in the income statement section. Each debit and credit column will then be totaled.

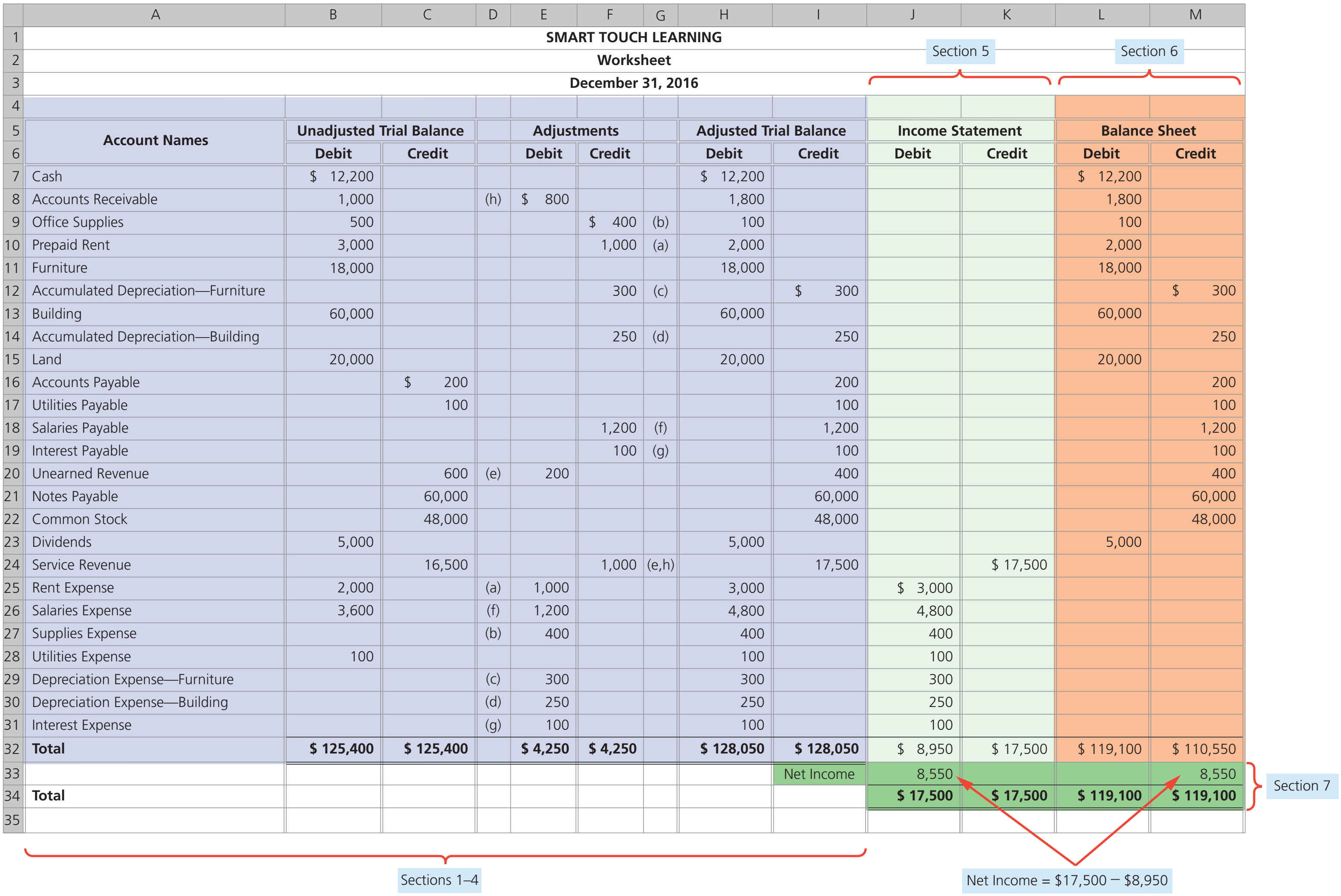
Section 6—Balance Sheet

The balance sheet section includes the asset and liability accounts and all equity accounts except revenues and expenses. The balance of each of these accounts will be transferred from the adjusted trial balance section of the worksheet to the appropriate column in the balance sheet section. For example, Accumulated Depreciation—Furniture, a contra-asset, has a $300 credit balance in the adjusted trial balance section. This amount will be reported as a credit of $300 in the balance sheet section. Each debit and credit column will then be totaled.

Section 7—Determine Net Income or Net Loss

Compute net income or net loss as total revenues minus total expenses ($17,500 − $8,950). Enter net income (loss) as the balancing amount in the income statement and balance sheet sections. If net income exists, the balance will be entered in the *debit* column of the

Exhibit 4-4 | **Completed Worksheet**



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**SMART TOUCH LEARNING**												
2	**Worksheet**												
3	**December 31, 2016**												
4													
5	**Account Names**	**Unadjusted Trial Balance**		**Adjustments**				**Adjusted Trial Balance**		**Income Statement**		**Balance Sheet**	
6		**Debit**	**Credit**		**Debit**	**Credit**		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 12,200						$ 12,200				$ 12,200	
8	Accounts Receivable	1,000		(h)	$ 800			1,800				1,800	
9	Office Supplies	500				$ 400	(b)	100				100	
10	Prepaid Rent	3,000				1,000	(a)	2,000				2,000	
11	Furniture	18,000						18,000				18,000	
12	Accumulated Depreciation—Furniture					300	(c)		$ 300				$ 300
13	Building	60,000						60,000				60,000	
14	Accumulated Depreciation—Building					250	(d)		250				250
15	Land	20,000						20,000				20,000	
16	Accounts Payable		$ 200						200				200
17	Utilities Payable		100						100				100
18	Salaries Payable					1,200	(f)		1,200				1,200
19	Interest Payable					100	(g)		100				100
20	Unearned Revenue		600	(e)	200				400				400
21	Notes Payable		60,000						60,000				60,000
22	Common Stock		48,000						48,000				48,000
23	Dividends	5,000						5,000				5,000	
24	Service Revenue		16,500			1,000	(e,h)		17,500		$ 17,500		
25	Rent Expense	2,000		(a)	1,000			3,000		$ 3,000			
26	Salaries Expense	3,600		(f)	1,200			4,800		4,800			
27	Supplies Expense			(b)	400			400		400			
28	Utilities Expense	100						100		100			
29	Depreciation Expense—Furniture			(c)	300			300		300			
30	Depreciation Expense—Building			(d)	250			250		250			
31	Interest Expense			(g)	100			100		100			
32	**Total**	**$ 125,400**	**$ 125,400**		**$ 4,250**	**$ 4,250**		**$ 128,050**	**$ 128,050**	$ 8,950	$ 17,500	$ 119,100	$ 110,550
33									Net Income	8,550			8,550
34	**Total**									**$ 17,500**	**$ 17,500**	**$ 119,100**	**$ 119,100**
35													

income statement section and the *credit* column of the balance sheet section. For example, Smart Touch Learning has net income of $8,550. This amount should be entered as a debit in the income statement section and a credit in the balance sheet section.

If expenses exceed revenues, the result is a net loss. In that event, print Net Loss on the worksheet next to the result. The net loss amount should be entered in the *credit* column of the income statement (to balance out) and in the *debit* column of the balance sheet (to balance out). The main thing to remember is that the net income or net loss is the balancing amount on the worksheet. It should always be entered on the side that makes the debit and credit columns balance.

Smart Touch Learning has now completed the worksheet as of December 31. Remember that the worksheet is an internal tool that can be used to help in recording adjusting entries and preparing financial statements. The adjusting entries still need to be recorded in the journal and posted to the ledger (as shown in Chapter 3), and the financial statements must still be prepared (as shown in Exhibits 4-2 and 4-3).

What if Smart Touch Learning had a net loss instead of net income? Would the amount of net loss be entered in the debit column of the income statement section and the credit column of the balance sheet section?

Try It!

For each account listed, identify whether the account would appear in either the income statement section or the balance sheet section of the worksheet. Assuming normal balances, identify if the account would be recorded in the debit (DR) or credit (CR) column.

8. Service Revenue
9. Accounts Payable
10. Cash
11. Depreciation Expense—Building
12. Dividends
13. Accumulated Depreciation—Building

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S4-6 through S4-8. MyAccountingLab

WHAT IS THE CLOSING PROCESS, AND HOW DO WE CLOSE THE ACCOUNTS?

Learning Objective 3

Explain the purpose of, journalize, and post closing entries

At the end of the accounting cycle, after the financial statements have been prepared, Smart Touch Learning is ready to close the books. Often referred to as the closing process, this consists of journalizing and posting the closing entries in order to get the accounts ready for the next period. The **closing process** zeroes out all revenue accounts and all expense accounts in order to measure each period's net income separately from all other periods. It also updates the Retained Earnings account balance for net income or loss during the period and any dividends paid to the stockholders. The closing process prepares the accounts for the next time period by setting the balances of revenues, expenses, and dividends to zero. By completing the closing process, the business is following the time period concept in that it is slicing its activities into small time segments and preparing financial statements for only those specific periods.

Closing Process

A step in the accounting cycle that occurs at the end of the period. The closing process consists of journalizing and posting the closing entries to set the balances of the revenues, expenses, Income Summary, and Dividends accounts to zero for the next period.

Recall that the income statement reports net income for a specific period. For example, Smart Touch Learning's net income for the two months ended December 31, 2016, relates exclusively to November and December, 2016. At December 31, 2016, Smart Touch Learning closes its revenue and expense accounts for the last two months of the year. For this reason, revenues and expenses are called **temporary accounts** (also known as *nominal accounts*). For example, Smart Touch Learning's balance of Service Revenue at December 31, 2016, is $17,500. This balance relates exclusively to the last two months of 2016 and must be zeroed out before the company records revenue for the next year. Similarly, the various expense account balances are for the last two months of 2016 only and must also be zeroed out at the end of the year.

Temporary Account

An account that relates to a particular accounting period and is closed at the end of that period—the revenues, expenses, Income Summary, and Dividends accounts.

The Dividends account is also temporary and must be closed at the end of the period because it measures the payments to stockholders for only that one period. All temporary accounts (revenues, expenses, and dividends) are closed (zeroed). The balances of temporary accounts do not carry forward into the next time period. Instead, the business starts the new time period with a zero beginning balance in the temporary accounts.

Permanent Account
An account that is *not* closed at the end of the period—the asset, liability, Common Stock, and Retained Earnings accounts.

Closing Entries
Entries that transfer the revenues, expenses, and Dividends balances to the Retained Earnings account to prepare the company's books for the next period.

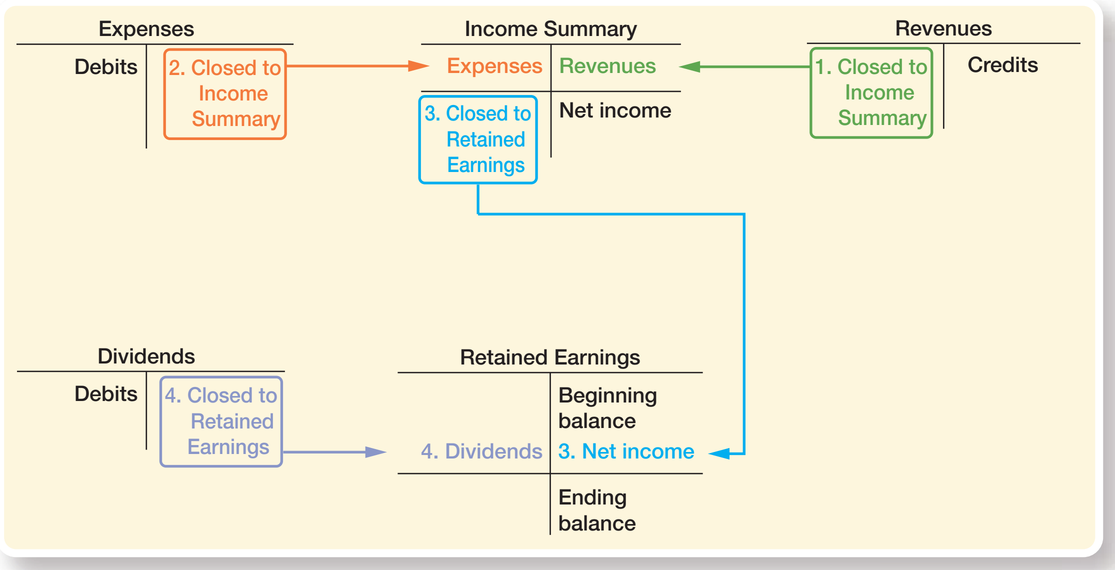
Income Summary
A temporary account into which revenues and expenses are transferred prior to their final transfer into the Retained Earnings account. Summarizes net income (or net loss) for the period.

By contrast, the **permanent accounts** (also known as *real accounts*)—the assets, liabilities, Common Stock, and Retained Earnings—are not closed at the end of the period. Permanent account balances are carried forward into the next time period. All accounts on the balance sheet are permanent accounts.

Closing entries transfer the revenues, expenses, and Dividends balances to the Retained Earnings account to prepare the company's books for the next period. This transfer to Retained Earnings also causes the Retained Earnings ledger account to now equal its balance reported on the Balance Sheet.

As an intermediate step, the revenues and the expenses may be transferred first to an account titled **Income Summary**. The Income Summary account *summarizes* the net income (or net loss) for the period by collecting the sum of all the expenses (a debit) and the sum of all the revenues (a credit). The Income Summary account is like a temporary "holding tank" that shows the amount of net income or net loss of the current period. Its ending balance—net income or net loss—is then transferred (closed) to the Retained Earnings account (the final account in the closing process). Exhibit 4-5 summarizes the closing process.

Exhibit 4-5 | **The Closing Process**



When thinking about which accounts to close, consider your grades in this class as an example. If you made a failing grade on an exam in this class, would you want your exam grade for this class to carry forward to your next accounting class? Your answer would probably be no, because your exam grade in this class does not necessarily represent your knowledge in your next class. In this example, your exam grades are temporary and should not carry forward to your next accounting class. In the same sense, a business's revenues, expenses, and dividends for a specific time period should not be carried forward to the next time period because doing so does not accurately reflect that future period.

DECISIONS

Why should a business close its books?

Dream Builder is a business that specializes in building custom homes, remodeling existing homes, and creating backyard paradises. Dream Builders has just completed its first year of business, and Shane Wilson, owner and manager, has been very pleased with the first year of operations. The business is growing and even earned a profit. Shane has just met with the company's accountant, Felicia Turner, to go over the books for the year and to get ready for next year. Felicia has told him that he will need to close the books for the current year before he can begin recording transactions for next year. Shane is very confused. He doesn't understand and tells Felicia, "I'm not planning on closing our business. It's doing great. Why would I need to close the books?" What should Felicia tell Shane?

Solution

Many new businesses don't realize that they have to close their books each year. Felicia should explain to Shane that closing the books does not imply that the business is closing. Instead, it simply closes the books for the year that has just been completed and prepares the books for a new year. Felicia should explain to Shane that the process of closing the books updates the Retained Earnings account for the net income and any dividends during the year. It allows the business to allocate net income to a specific time period (following the time period concept) and begin the new year with zero balances in all temporary accounts (revenues, expenses, Income Summary, and Dividends).

Closing Temporary Accounts—Net Income for the Period

As stated previously, all temporary accounts are closed (zeroed out) during the closing process. Revenue, expenses, and dividends accounts are not permanent. Only the balance sheet accounts are permanent. The four steps in closing the books follow (and are illustrated in Exhibit 4-6).

Step 1: Make the revenue accounts equal zero via the Income Summary account. This closing entry transfers total revenues to the *credit* side of the Income Summary account.

For example, Smart Touch Learning has a $17,500 credit balance in Service Revenue. To close this account (make it zero), we *debit* Service Revenue and *credit* Income Summary.

Service Revenue

		17,500	Adj. Bal.
Clos. 1	17,500		
		0	Bal.

Income Summary

		17,500	Clos. 1

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Service Revenue	17,500	
	Income Summary		17,500
	To close revenue.		

A	=	L	+	E↑↓
				Service Revenue↓ Income Summary↑

Step 2: Make expense accounts equal zero via the Income Summary account. This closing entry transfers total expenses to the *debit* side of the Income Summary account.

As an example, we will review the Rent Expense account for Smart Touch Learning, which has a $3,000 debit balance. This account will be closed with a *credit* to Rent Expense.

Rent Expense

Adj. Bal.	3,000		
		3,000	Clos. 2
Bal.	0		

Smart Touch Learning will close all expense accounts in the same manner. This will most likely be done with a compound closing entry. Each individual expense account will be *credited* and the Income Summary account will be *debited* for the total amount of expenses.

A	=	L	+	E↑↓
				Income Summary↓ Expenses↓

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Income Summary	8,950	
	Rent Expense		3,000
	Salaries Expense		4,800
	Supplies Expense		400
	Utilities Expense		100
	Depreciation Expense—Furniture		300
	Depreciation Expense—Building		250
	Interest Expense		100
	To close expenses.		

The Income Summary account now holds the net income of $8,550 for the period. The Income Summary T-account after closing revenues and expenses is:

Income Summary

Clos. 2	8,950	17,500	Clos. 1
		8,550	Bal.

Step 3: Make the Income Summary account equal zero via the Retained Earnings account. This closing entry transfers net income (or net loss) to the Retained Earnings account.

Smart Touch Learning has an $8,550 credit balance in the Income Summary account. This represents net income for the period. Net income will now be transferred to the Retained Earnings account. We will *debit* Income Summary and *credit* Retained Earnings. Notice that this closing entry, in effect, increases the Retained Earnings account for the net income of the period.

Income Summary

Clos. 2	8,950	17,500	Clos. 1
		8,550	Bal.
Clos. 3	8,550		
		0	Bal.

Net Income

Retained Earnings

		0	Adj. Bal.
		8,550	Clos. 3

A	=	L	+	E↑↓
				Income Summary↓ Retained Earnings↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Income Summary	8,550	
	Retained Earnings		8,550
	To close Income Summary.		

Step 4: Make the Dividends account equal zero via the Retained Earnings account. This entry transfers the dividends to the *debit* side of the Retained Earnings account.

Smart Touch Learning has a $5,000 debit balance in the Dividends account. This account will be closed with a *debit* to Retained Earnings and a *credit* to Dividends.

Retained Earnings

		0	Adj. Bal.
Clos. 4	5,000	8,550	Clos. 3
		3,550	Bal.

Dividends

Adj. Bal.	5,000		
		5,000	Clos. 4
Bal.	0		

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Retained Earnings	5,000	
	Dividends		5,000
	To close Dividends.		

A = L + E↑↓

Retained Earnings↓
Dividends↓

Closing Temporary Accounts—Net Loss for the Period

If a business had a net loss for the period, closing entries 1, 2, and 4 would be similar to those completed for net income. However, the closing entry to close the Income Summary account would be different. Consider this example. Suppose a business had a net loss of $2,000. The Income Summary T-account would hold a *debit* balance instead of a *credit* balance. Therefore, the closing entry to close Income Summary would be a *debit* to Retained Earnings and a *credit* to Income Summary.

What if a business had a net loss for the period? Would the closing entries be the same?

Income Summary

Clos. 2	5,000	3,000	Clos. 1
Bal.	2,000		
		2,000	Clos. 3
		0	Bal.

Net Loss

Retained Earnings

Clos. 3	2,000	0	Adj. Bal.

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Retained Earnings	2,000	
	Income Summary		2,000
	To close Income Summary.		

A = L + E↑↓

Retained Earnings↓
Income Summary↑

Notice that the effect of this closing entry decreases Retained Earnings. This is because a net loss decreases the Retained Earnings account.

Exhibit 4-6 (on the next page) shows the complete closing process for Smart Touch Learning. Panel A gives the closing entries, and Panel B shows the accounts after posting. After the closing entries, Retained Earnings ends with a balance of $3,550. Trace this balance to the statement of retained earnings and then to the balance sheet in Exhibit 4-2.

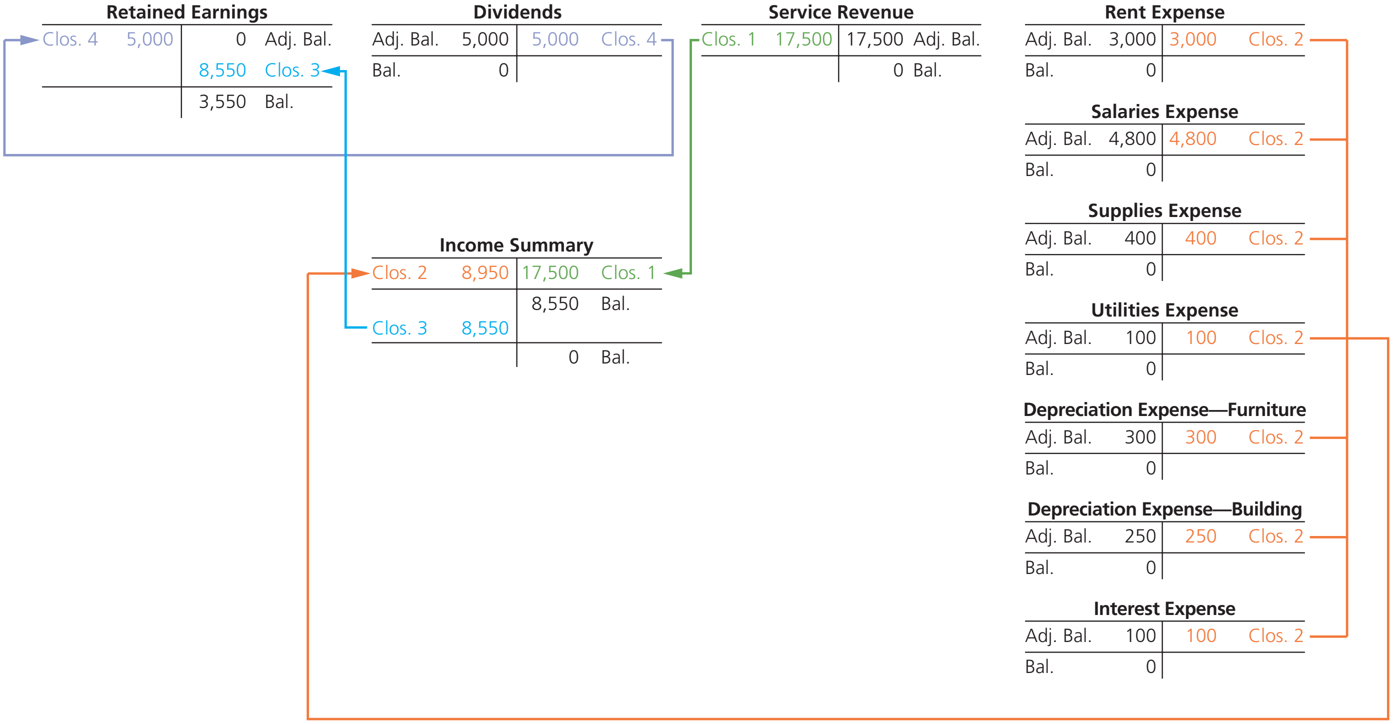
Exhibit 4-6 | Journalizing and Posting Closing Entries

Panel A: Journalizing

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Service Revenue	17,500	
	Income Summary		17,500
	To close revenue.		
31	Income Summary	8,950	
	Rent Expense		3,000
	Salaries Expense		4,800
	Supplies Expense		400
	Utilities Expense		100
	Depreciation Expense—Furniture		300
	Depreciation Expense—Building		250
	Interest Expense		100
	To close expenses.		
31	Income Summary	8,550	
	Retained Earnings		8,550
	To close Income Summary.		
31	Retained Earnings	5,000	
	Dividends		5,000
	To close Dividends.		

When a business uses a computerized accounting system, the software automatically closes the books. The software identifies the temporary accounts, records the closing entries, and posts to the ledger accounts. The closing entries are completed in a matter of seconds.

Panel B: Posting



Retained Earnings

Clos. 4	5,000	0	Adj. Bal.
		8,550	Clos. 3
		3,550	Bal.

Dividends

Adj. Bal.	5,000	5,000	Clos. 4
Bal.	0		

Service Revenue

Clos. 1	17,500	17,500	Adj. Bal.
		0	Bal.

Income Summary

Clos. 2	8,950	17,500	Clos. 1
		8,550	Bal.
Clos. 3	8,550		
		0	Bal.

Rent Expense

Adj. Bal.	3,000	3,000	Clos. 2
Bal.	0		

Salaries Expense

Adj. Bal.	4,800	4,800	Clos. 2
Bal.	0		

Supplies Expense

Adj. Bal.	400	400	Clos. 2
Bal.	0		

Utilities Expense

Adj. Bal.	100	100	Clos. 2
Bal.	0		

Depreciation Expense—Furniture

Adj. Bal.	300	300	Clos. 2
Bal.	0		

Depreciation Expense—Building

Adj. Bal.	250	250	Clos. 2
Bal.	0		

Interest Expense

Adj. Bal.	100	100	Clos. 2
Bal.	0		

Try It!

Benson Auto Repair had the following account balances after adjustments. Assume all accounts had normal balances.

Cash	$ 4,000	Common Stock	$ 20,000
Accounts Receivable	3,200	Retained Earnings	15,700
Prepaid Rent	1,900	Dividends	2,100
Office Supplies	3,000	Service Revenue	1,600
Equipment	34,800	Depreciation Expense—Equipment	300
Accumulated Depreciation—Equipment	1,600	Salaries Expense	800
Accounts Payable	5,400	Rent Expense	500
Notes Payable (long-term)	7,000	Utilities Expense	600
		Supplies Expense	100

14. Prepare the closing entries for Benson at December 31.
15. What is the balance of Retained Earnings after closing entries have been recorded? (Use a T-account to determine the balance.)

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S4-9 and S4-10. MyAccountingLab

HOW DO WE PREPARE A POST-CLOSING TRIAL BALANCE?

After closing entries are recorded and posted, the accounting cycle ends with a **post-closing trial balance** (see Exhibit 4-7 on the next page). This step lists the accounts and their balances after closing.

Only assets, liabilities, Common Stock, and Retained Earnings accounts (permanent accounts) appear on the post-closing trial balance. No temporary accounts—revenues, expenses, Income Summary, or Dividends—are included because they have been closed (their balances are zero). Also notice that the Retained Earnings account has been updated to reflect the period's net income (or net loss) and any dividends. The ledger is now up to date and ready for the next period.

Learning Objective 4
Prepare the post-closing trial balance

Post-Closing Trial Balance
A list of the accounts and their balances at the end of the period after journalizing and posting the closing entries. It should include only permanent accounts.

Notice that the Adjusted Trial Balance for Smart Touch Learning (Exhibit 4-1) and the Post-Closing Trial Balance (Exhibit 4-7) are similar. An easy way to make sure that you didn't make an error in the closing process is to compare the Adjusted Trial Balance to the Post-Closing Trial Balance to ensure that: (1) account balances above Retained Earnings are the same; (2) account balances below Retained Earnings are zero and, therefore, not included; and (3) the Retained Earnings account balance matches Retained Earnings on the balance sheet.

Exhibit 4-7 | **Post-Closing Trial Balance**

SMART TOUCH LEARNING
Post-Closing Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 12,200	
Accounts Receivable	1,800	
Office Supplies	100	
Prepaid Rent	2,000	
Furniture	18,000	
Accumulated Depreciation—Furniture		$ 300
Building	60,000	
Accumulated Depreciation—Building		250
Land	20,000	
Accounts Payable		200
Utilities Payable		100
Salaries Payable		1,200
Interest Payable		100
Unearned Revenue		400
Notes Payable		60,000
Common Stock		48,000
Retained Earnings		3,550
Total	**$ 114,100**	**$ 114,100**

Permanent Accounts

Try It!

For each account listed, identify whether the account would appear on the post-closing trial balance. Indicate either yes or no.

16. Dividends
17. Service Revenue
18. Cash
19. Advertising Expense
20. Retained Earnings

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S4-11. MyAccountingLab

WHAT IS THE ACCOUNTING CYCLE?

We have now completed the accounting cycle for Smart Touch Learning. The **accounting cycle** is the process by which companies produce their financial statements for a specific period. It is the steps that are followed throughout the time period. The accounting cycle starts with the beginning asset, liability, and stockholders' equity account balances left over from the preceding period. Exhibit 4-8 outlines the complete accounting cycle of Smart Touch Learning and every other business. Start with Step 1 and move clockwise.

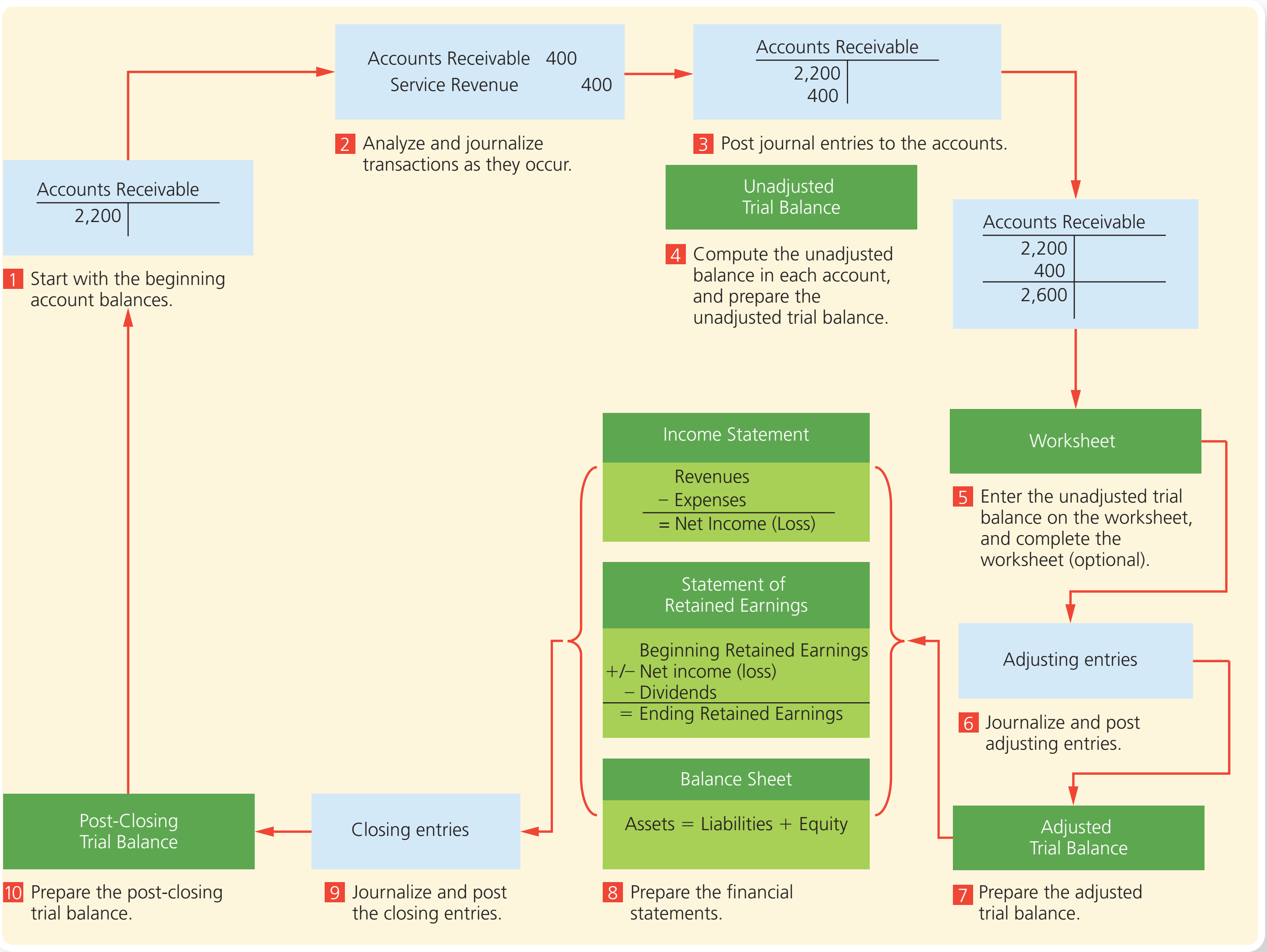
Accounting takes place at two different times:

- During the period (Steps 1 through 3)—Journalizing transactions and posting to the accounts
- End of the period (Steps 4 through 10)—Adjusting the accounts, preparing the financial statements, and closing the accounts

Learning Objective 5
Describe the accounting cycle

Accounting Cycle
The process by which companies produce their financial statements for a specific period.

Exhibit 4-8 | **The Accounting Cycle**



1 Start with the beginning account balances.

2 Analyze and journalize transactions as they occur.

3 Post journal entries to the accounts.

4 Compute the unadjusted balance in each account, and prepare the unadjusted trial balance.

5 Enter the unadjusted trial balance on the worksheet, and complete the worksheet (optional).

6 Journalize and post adjusting entries.

7 Prepare the adjusted trial balance.

8 Prepare the financial statements.

9 Journalize and post the closing entries.

10 Prepare the post-closing trial balance.

Try It!

21. The steps of the accounting cycle are presented below. Identify the correct order of the steps.

- **a.** Journalize and post the closing entries.
- **b.** Start with the beginning account balances.
- **c.** Prepare the financial statements.
- **d.** Compute the unadjusted balance in each account, and prepare the unadjusted trial balance.
- **e.** Journalize and post adjusting entries.
- **f.** Enter the unadjusted trial balance on the worksheet, and complete the worksheet (optional).
- **g.** Prepare the adjusted trial balance.
- **h.** Analyze and journalize transactions as they occur.
- **i.** Post journal entries to the accounts.
- **j.** Prepare the post-closing trial balance.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S4-12. MyAccountingLab

HOW DO WE USE THE CURRENT RATIO TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 6
Use the current ratio to evaluate business performance

Accounting is designed to provide information that stockholders, managers, and lenders can use to make decisions. A bank considering lending money to a business must predict whether that business can repay the loan. If a business already has a lot of debt, repayment is less certain than if it does not owe much money. In this chapter, we will introduce another ratio that can be used to measure the business's financial position, the current ratio.

Current Ratio
Measures the company's ability to pay current liabilities from current assets. Total current assets / Total current liabilities.

The **current ratio** measures a company's ability to pay its current liabilities with its current assets. This ratio is computed as follows:

Current ratio = Total current assets / Total current liabilities

A company prefers to have a high current ratio because that means it has plenty of current assets to pay its current liabilities. A current ratio that has increased from the prior period indicates improvement in a company's ability to pay its current debts. A current ratio that has decreased from the prior period signals deterioration in the company's ability to pay its current liabilities.

A rule of thumb: A strong current ratio is 1.50, which indicates that the business has $1.50 in current assets for every $1.00 in current liabilities. A current ratio of 1.00 is considered low and somewhat risky.

Returning to **Green Mountain Coffee Roasters, Inc.** we can now evaluate Green Mountain's current ratio. Green Mountain had the following total current assets and current liabilities, found on the balance sheet located in Appendix A at the back of the book.

	As of Sep. 28, 2013	As of Sep. 29, 2012
Total current assets (in thousands)	$ 1,521,492	$ 1,322,956
Total current liabilities (in thousands)	597,063	519,987

The current ratio for Green Mountain as of September 28, 2013, follows:

Current ratio = $1,521,492 / $597,063 = 2.55*

*rounded

In comparison, the current ratio as of September 29, 2012, for Green Mountain was:

Current ratio = $1,322,956 / $519,987 = 2.54

The current ratio has increased very little from 2012 to 2013. This indicates that Green Mountain is remaining steady in its ability to pay its current debts. Given that the current ratio is above 1.5 for both years, Green Mountain would be considered a less risky investment than another business with a lower current ratio. Similarly, creditors would be more willing to extend credit to Green Mountain than another company with a lower current ratio.

ETHICS

Should revenue be recorded early?

Carnival Custom Painting's controller, Kristi Seay, is hoping to get a loan from a local bank. The business's van engine has just died, and the corporation has no extra cash to replace the engine. It needs a short-term loan of $3,000. A teller at the bank has told Kristi that the bank will only approve the loan if the business has a current ratio that is above 1.2. Currently, Carnival's current ratio is 1.1. The corporation has just received a contract for painting a new commercial building. Kristi has told the teller that she expects revenue of $15,000 from the contract but won't receive payment until the job is completed. The business plans on starting the job next week but won't be finished for another two months, not soon enough to use the cash to replace the engine in the van. The teller has suggested to Kristi that she go ahead and record the revenue and cash receipt of the painting contract even though it hasn't been completed. This, he tells her, will increase the business's current assets and thereby increase the current ratio to 1.4, well above the bank minimum. What should Kristi do? What would you do?

Solution

Kristi should not record the revenue and cash receipt early. The revenue recognition principle requires that businesses record revenue only when it has been earned. Given that Carnival Custom Painting has not yet started the job, no revenue has been earned. Kristi should look for alternative sources of financing instead of trying to manipulate the current ratio to meet the minimum required by the bank. Another possibility would be for Kristi to renegotiate the contract with the new client to receive $3,000 in advance instead of after the completion of the job. This would allow Kristi to make the repairs on the van and not have to borrow the money from the bank.

Try It!

22. Benson Auto Repair has the following account balances at December 31, 2016, from its adjusted trial balance. Compute Benson's current ratio.

Cash	$ 4,000	Common Stock	$ 20,000
Accounts Receivable	3,200	Retained Earnings	15,700
Prepaid Rent	1,900	Dividends	2,100
Office Supplies	3,000	Service Revenue	1,600
Equipment	34,800	Depreciation Expense—Equipment	300
Accumulated Depreciation—Equipment	1,600	Salaries Expense	800
Accounts Payable	5,400	Rent Expense	500
Notes Payable (long-term)	7,000	Utilities Expense	600
		Supplies Expense	100

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S4-13. MyAccountingLab

APPENDIX 4A: Reversing Entries: An Optional Step

WHAT ARE REVERSING ENTRIES?

Learning Objective 7
Explain the purpose of, journalize, and post reversing entries

Reversing entries are special journal entries that ease the burden of accounting for transactions in a later period. Reversing entries are the exact opposite of certain adjusting entries. Reversing entries are used in conjunction with accrual-type adjustments, such as accrued salaries expense and accrued service revenue. Generally Accepted Accounting Principles do not require reversing entries. They are used only for convenience and to save time.

Accounting for Accrued Expenses

To see how reversing entries work, let's return to Smart Touch Learning. In the unadjusted trial balance, Salaries Expense has a debit balance of $3,600 for salaries paid during November and December. At December 31, the business still owes it employees an additional $1,200 for the last half of the month, so the business makes the following adjusting entry:

A	=	L↑	+	E↓
		Salaries Payable↑		Salaries Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Salaries Expense	1,200	
	Salaries Payable		1,200
	To accrue salaries expense.		

After posting, the accounts are updated as of December 31:

Salaries Payable

		1,200	Adj.
		1,200	Adj. Bal.

Salaries Expense

Nov. 15	1,200		
Dec. 1	1,200		
Dec. 15	1,200		
Adj.	1,200		
Adj. Bal.	4,800		

After the adjusting entry, the following are noted:

- The income statement reports Salaries Expense of $4,800.
- The balance sheet reports Salaries Payable of $1,200.

The $4,800 debit balance of Salaries Expense is closed at December 31, 2016, with the following closing entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Income Summary	4,800	
	Salaries Expense		4,800
	To close expense.		

A		L	+	E↑↓
	=			Income Summary↓ Salaries Expense↓

After posting the closing entry, Salaries Expense has a zero balance as follows:

Salaries Expense

Nov. 15	1,200		
Dec. 1	1,200		
Dec. 15	1,200		
Adj.	1,200		
Adj. Bal.	4,800		
		4,800	Clos.
Bal.	0		

Accounting Without a Reversing Entry

Assume that Smart Touch Learning will pay its employees the second half of December's salaries along with the first half of January on January 15, 2017. On January 15, the company would record the following journal entry:

Date	Accounts and Explanation	Debit	Credit
2017			
Jan. 15	Salaries Payable	1,200	
	Salaries Expense	1,200	
	Cash		2,400
	To record payment of salaries.		

A↓		L↓	+	E↓
Cash↓	=	Salaries Payable↓		Salaries Expense↑

After posting the cash payment, the Salaries Payable and Salaries Expense accounts are as follows:

Salaries Payable

		1,200	Bal. 1/1/17
Jan. 15	1,200		
		0	Bal.

Salaries Expense

Jan. 15	1,200		

This method of recording the cash payment is correct. However, it wastes time because the business must refer back to the December 31 adjustments. Otherwise, the business does not know the amount of the debit to Salaries Payable (in this example $1,200). Searching December's adjusting entries wastes time and money. To save time, accountants can use reversing entries.

Accounting with a Reversing Entry

Reversing Entry
A special journal entry that eases the burden of accounting for transactions in the next period. Such entries are the exact opposite of a prior adjusting entry.

A **reversing entry** switches the debit and the credit of a previous entry. A reversing entry, then, is the exact opposite of a prior adjusting entry. The reversing entry is dated the first day of the new period.

To illustrate reversing entries, recall that on December 31 Smart Touch Learning made the following adjusting entry to accrue Salaries Expense:

A = { **L↑** + **E↓**
Salaries Payable↑ Salaries Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Salaries Expense	1,200	
	Salaries Payable		1,200
	To accrue salaries expense.		

The reversing entry just reverses the debit and the credit of the adjustment:

A = { **L↓** + **E↑**
Salaries Payable↓ Salaries Expense↓

Date	Accounts and Explanation	Debit	Credit
2017			
Jan. 1	Salaries Payable	1,200	
	Salaries Expense		1,200
	To reverse the salaries adjusting entry.		

Observe that the reversing entry is dated the first day of the new period. It is the exact opposite of the adjusting entry. Ordinarily, the accountant who makes the adjusting entries will also prepare reversing entries at the same time. Smart Touch Learning dates the reversing entry as of January 1 so that it affects only the new period. Note how the accounts appear after the accounting clerk posts the reversing entry:

Salaries Payable

		1,200	Adj.
		1,200	Bal. 1/1/17
Rev. Jan. 1	1,200		
		0	Bal.

Salaries Expense

Bal. 1/1/17	0		
		1,200	Rev. Jan. 1

The arrow between the T-accounts shows the transfer of the $1,200 from Salaries Payable to Salaries Expense. This credit in Salaries Expense does not mean that the entity has negative salaries expense, as you might think. Instead, the odd credit balance in the Salaries Expense account is merely a temporary result of the reversing entry. The credit balance is eliminated on January 15, when Smart Touch Learning pays the payroll and debits Salaries Expense:

Date	Accounts and Explanation	Debit	Credit
Jan. 15	Salaries Expense	2,400	
	Cash		2,400
	To record payment of salaries.		

A↓	=	L	+	E↓
Cash↓				Salaries Expense↑

This payment is posted to the Salaries Expense account as follows:

Salaries Expense

Bal. 1/1/17	0		
Jan. 15	2,400	1,200	Rev. Jan. 1
Bal.	1,200		

Now Salaries Expense has a debit balance of $1,200, which is correct and represents only the January salaries. The payment of salaries covered two periods: $1,200 related to 2016 and $1,200 related to 2017. The Salaries Expense account should only contain the amount that relates to 2017.

Try It!

Winters Landscape Services accrued $4,000 of Salaries Expense at December 31. Winters paid the next payroll at January 10 of $6,000. This payment included the accrued amount at December 31, plus $2,000 for the first few days of January.

23A. Record the adjusting entry to accrue Salaries Expense.
24A. Record the reversing entry.
25A. Journalize the cash payment.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S4A-14. MyAccountingLab

REVIEW

> Things You Should Know

1. How do we prepare financial statements?

- Financial statements are prepared from the adjusted trial balance in the following order:
    1. Income statement—reports revenues and expenses and calculates net income or net loss during the period
    2. Statement of retained earnings—shows how retained earnings changed during the period due to net income or net loss and dividends
    3. Balance sheet—reports assets, liabilities, and stockholders' equity as of the last day of the period
- A classified balance sheet classifies each asset and each liability into specific categories.

2. How could a worksheet help in preparing financial statements?

- The columns of a worksheet can be extended to help in preparing the financial statements.
- The income statement section will include only revenue and expense accounts.
- The balance sheet section will include asset and liability accounts and all equity accounts except revenues and expenses.

3. What is the closing process, and how do we close the accounts?

- The closing process consists of zeroing out all temporary accounts (revenues, expenses, Income Summary, and Dividends) in order to get the accounts ready for the next period.
- The closing process also updates the Retained Earnings account balance for net income or net loss during the period and any dividends paid to the stockholders.
- There are four steps in the closing process:
    1. Make the revenue accounts equal zero via the Income Summary account.
    2. Make the expense accounts equal zero via the Income Summary account.
    3. Make the Income Summary account equal zero via the Retained Earnings account.
    4. Make the Dividends account equal zero via the Retained Earnings account.

4. How do we prepare a post-closing trial balance?

- A post-closing trial balance is prepared after the closing entries are recorded and posted to the ledger.
- It contains only assets, liabilities, Common Stock, and Retained Earnings accounts (permanent accounts).

5. What is the accounting cycle?

- The accounting cycle is the process by which companies produce their financial statements for a specific period.
  1. Start with the beginning account balances.
  2. Analyze and journalize transactions as they occur.
  3. Post journal entries to the accounts.
  4. Compute the unadjusted balance in each account, and prepare the unadjusted trial balance.
  5. Enter the unadjusted trial balance on the worksheet, and complete the worksheet (optional).
  6. Journalize and post adjusting entries.
  7. Prepare the adjusted trial balance.
  8. Prepare the financial statements.
  9. Journalize and post the closing entries.
  10. Prepare the post-closing trial balance.

6. How do we use the current ratio to evaluate business performance?

- The current ratio measures a company's ability to pay its current liabilities with its current assets.
- Current ratio = Total current assets / Total current liabilities.

7. What are reversing entries? (Appendix 4A)

- Reversing entries are special journal entries that ease the burden of accounting for transactions in a later period.
- Reversing entries are the exact opposite of certain adjusting entries and are used only for accrual adjusting entries.

> Summary Problem

The adjusted trial balance of Martinez Advertising Services, at December 31, 2016, follows.

MARTINEZ ADVERTISING SERVICES
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 6,000	
Accounts Receivable	6,300	
Office Supplies	200	
Furniture	8,000	
Accumulated Depreciation—Furniture		$ 6,000
Building	42,000	
Accumulated Depreciation—Building		24,000
Land	10,000	
Accounts Payable		2,000
Salaries Payable		500
Unearned Revenue		5,000
Notes Payable (long-term)		7,000
Common Stock		12,000
Dividends	25,000	
Service Revenue		64,300
Salaries Expense	16,500	
Supplies Expense	800	
Depreciation Expense—Furniture	2,000	
Depreciation Expense—Building	1,000	
Advertising Expense	3,000	
Total	**$ 120,800**	**$ 120,800**

Requirements

1. Prepare the income statement for the year ended December 31, 2016.
2. Prepare the statement of retained earnings for the year ended December 31, 2016.
3. Prepare the classified balance sheet at December 31, 2016. Use the report form.
4. Calculate the current ratio at December 31, 2016.
5. Journalize and post the closing entries. Indicate the balance of the Retained Earnings account after the closing entries are posted.
6. Prepare a post-closing trial balance at December 31, 2016.

> Solution

Requirement 1

MARTINEZ ADVERTISING SERVICES Income Statement Year Ended December 31, 2016		
Revenues:		
Service Revenue		$ 64,300
Expenses:		
Salaries Expense	$ 16,500	
Advertising Expense	3,000	
Depreciation Expense—Furniture	2,000	
Depreciation Expense—Building	1,000	
Supplies Expense	800	
Total Expenses		23,300
Net Income		**$ 41,000**

Requirement 2

MARTINEZ ADVERTISING SERVICES Statement of Retained Earnings Year Ended December 31, 2016	
Retained Earnings, January 1, 2016	$ 0
Net income for the year	41,000
	41,000
Dividends	(25,000)
Retained Earnings, December 31, 2016	**$ 16,000**

Requirement 3

MARTINEZ ADVERTISING SERVICES
Balance Sheet
December 31, 2016

Assets			
Current Assets:			
Cash		$ 6,000	
Accounts Receivable		6,300	
Office Supplies		200	
Total Current Assets			$ 12,500
Plant Assets:			
Furniture	$ 8,000		
Less: Accumulated Depreciation—Furniture	(6,000)	2,000	
Building	42,000		
Less: Accumulated Depreciation—Building	(24,000)	18,000	
Land		10,000	
Total Plant Assets			30,000
Total Assets			**$ 42,500**
Liabilities			
Current Liabilities:			
Accounts Payable		$ 2,000	
Salaries Payable		500	
Unearned Revenue		5,000	
Total Current Liabilities			$ 7,500
Long-term Liabilities:			
Notes Payable			7,000
Total Liabilities			14,500
Stockholders' Equity			
Common Stock		12,000	
Retained Earnings		16,000	
Total Stockholders' Equity			28,000
Total Liabilities and Stockholders' Equity			**$ 42,500**

Requirement 4

Current ratio = Total current assets / Total current liabilities = $12,500 / $7,500 = 1.67*

*rounded

Requirement 5

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Service Revenue	64,300	
	Income Summary		64,300
	To close revenue.		
31	Income Summary	23,300	
	Salaries Expense		16,500
	Supplies Expense		800
	Depreciation Expense—Furniture		2,000
	Depreciation Expense—Building		1,000
	Advertising Expense		3,000
	To close expenses.		
31	Income Summary	41,000	
	Retained Earnings		41,000
	To close Income Summary.		
31	Retained Earnings	25,000	
	Dividends		25,000
	To close Dividends.		

Retained Earnings

		0	Adj. Bal.
Dec. 31	25,000	41,000	Dec. 31
		16,000	Bal.

Dividends

Adj. Bal.	25,000	25,000	Dec. 31
Bal.	0		

Service Revenue

Dec. 31	64,300	64,300	Adj. Bal.
		0	Bal.

Salaries Expense

Adj. Bal.	16,500	16,500	Dec. 31
Bal.	0		

Supplies Expense

Adj. Bal.	800	800	Dec. 31
Bal.	0		

Depreciation Expense—Furniture

Adj. Bal.	2,000	2,000	Dec. 31
Bal.	0		

Income Summary

Dec. 31	23,300	64,300	Dec. 31
		41,000	Bal.
Dec. 31	41,000		
		0	Bal.

Depreciation Expense—Building

Adj. Bal.	1,000	1,000	Dec. 31
Bal.	0		

Advertising Expense

Adj. Bal.	3,000	3,000	Dec. 31
Bal.	0		

Requirement 6

MARTINEZ ADVERTISING SERVICES
Post-Closing Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 6,000	
Accounts Receivable	6,300	
Office Supplies	200	
Furniture	8,000	
Accumulated Depreciation—Furniture		$ 6,000
Building	42,000	
Accumulated Depreciation—Building		24,000
Land	10,000	
Accounts Payable		2,000
Salaries Payable		500
Unearned Revenue		5,000
Notes Payable (long-term)		7,000
Common Stock		12,000
Retained Earnings		16,000
Total	**$ 72,500**	**$ 72,500**

> Key Terms

Accounting Cycle (p. 223)
Classified Balance Sheet (p. 210)
Closing Entries (p. 216)
Closing Process (p. 215)
Current Asset (p. 211)
Current Liability (p. 211)
Current Ratio (p. 224)
Income Summary (p. 216)
Intangible Asset (p. 211)
Liquidity (p. 210)
Long-Term Asset (p. 211)
Long-Term Investment (p. 211)
Long-Term Liability (p. 211)
Operating Cycle (p. 211)
Permanent Account (p. 216)
Plant Asset (p. 211)
Post-Closing Trial Balance (p. 221)
Reversing Entry (p. 228) (Appendix 4A)
Temporary Account (p. 215)

> Quick Check

Learning Objective 1

1. Assets are listed on the balance sheet in the order of their
   a. purchase date.
   b. adjustments.
   c. liquidity.
   d. balance.

Learning Objective 1

2. Which of the following accounts would be included in the plant assets category of the classified balance sheet?
   a. Land held for investment
   b. Accumulated Depreciation
   c. Office Supplies
   d. Mortgage Payable

Learning Objective 2

3. Which situation indicates a net loss within the Income Statement section of the worksheet?

   a. Total credits exceed total debits
   b. Total debits exceed total credits
   c. Total debits equal total credits
   d. None of the above

Learning Objective 3

4. Which of the following accounts is *not* closed?

   a. Depreciation Expense
   b. Dividends
   c. Service Revenue
   d. Accumulated Depreciation

Learning Objective 3

5. What do closing entries accomplish?

   a. Zero out the revenues, expenses, and dividends
   b. Transfer revenues, expenses, and dividends to the Retained Earnings account
   c. Bring the Retained Earnings account to its correct ending balance
   d. All of the above

Learning Objective 3

6. Which of the following is *not* a closing entry?

Date	Accounts and Explanation	Debit	Credit
a.	Retained Earnings	xxx	
	Dividends		xxx
b.	Service Revenue	xxx	
	Income Summary		xxx
c.	Salaries Payable	xxx	
	Income Summary		xxx
d.	Income Summary	xxx	
	Rent Expense		xxx

Learning Objective 4

7. Which of the following accounts may appear on a post-closing trial balance?

   a. Cash, Salaries Payable, and Retained Earnings
   b. Cash, Salaries Payable, and Service Revenue
   c. Cash, Service Revenue, and Salaries Expense
   d. Cash, Salaries Payable, and Salaries Expense

Learning Objective 5

8. Which of the following steps of the accounting cycle is not completed at the end of the period?

   a. Journalize transactions as they occur.
   b. Journalize and post the closing entries.
   c. Prepare the post-closing trial balance.
   d. Prepare the financial statements.

Learning Objective 6

9. Clean Water Softener Systems has Cash of $600, Accounts Receivable of $900, and Office Supplies of $400. Clean owes $500 on Accounts Payable and has Salaries Payable of $200. Clean's current ratio is

   a. 2.71 **b.** 2.50 **c.** 0.63 **d.** 0.37

Learning Objective 7
Appendix 4A

10A. Which of the following statements concerning reversing entries is true?

   a. Reversing entries are required by Generally Accepted Accounting Principles.
   b. Reversing entries are most often used with accrual-type adjustments.
   c. Reversing entries are dated December 31, the end of the fiscal year.
   d. Reversing entries are recorded before adjusting entries.

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What document are financial statements prepared from?
2. What does the income statement report?
3. What does the statement of retained earnings show?
4. What does the balance sheet report?
5. Why are financial statements prepared in a specific order? What is that order?
6. What is a classified balance sheet?
7. Identify two asset categories on the classified balance sheet, and give examples of each category.
8. Identify two liability categories on the classified balance sheet, and give examples of each category.
9. What does liquidity mean?
10. How could a worksheet help in preparing financial statements?
11. If a business had a net loss for the year, where would the net loss be reported on the worksheet?
12. What is the closing process?
13. What are temporary accounts? Are temporary accounts closed in the closing process?
14. What are permanent accounts? Are permanent accounts closed in the closing process?
15. How is the Income Summary account used? Is it a temporary or permanent account?
16. What are the steps in the closing process?
17. If a business had a net loss for the year, what would be the closing entry to close Income Summary and transfer the net loss to the Retained Earnings account?
18. What types of accounts are listed on the post-closing trial balance?
19. List the steps of the accounting cycle.
20. What is the current ratio, and how is it calculated?

21A. What are reversing entries? Are they required by GAAP?

> Short Exercises

S4-1 Preparing an income statement

Learning Objective 1

Daylen Hair Stylists's adjusted trial balance follows. Prepare Daylen's income statement for the year ended December 31, 2017.

DEVON HAIR STYLISTS
Adjusted Trial Balance
December 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 1,700	
Accounts Receivable	1,200	
Office Supplies	1,000	
Equipment	20,300	
Accumulated Depreciation—Equipment		$ 2,500
Accounts Payable		200
Interest Payable		950
Notes Payable		3,300
Common Stock		11,450
Dividends	1,600	
Service Revenue		16,700
Rent Expense	4,700	
Supplies Expense	400	
Depreciation Expense—Equipment	2,500	
Interest Expense	1,700	
Total	**$ 35,100**	**$ 35,100**

S4-2 Preparing a statement of retained earnings

Learning Objective 1

Refer to the data in Short Exercise S4-1. Prepare Daylen's statement of retained earnings for the year ended December 31, 2017.

S4-3 Preparing a balance sheet (unclassified, account form)

Learning Objective 1

Refer to the data in Short Exercise S4-1. Prepare Daylen's *unclassified* balance sheet at December 31, 2017. Use the account form.

S4-4 Preparing a balance sheet (classified, report form)

Learning Objective 1

Prepare Devon's classified balance sheet at December 31, 2017. Assume the Notes Payable is due on December 1, 2020. Use the report form.

Learning Objective 1

S4-5 Classifying balance sheet accounts

For each account listed, identify the category in which it would appear on a classified balance sheet.

a. Office Supplies

b. Interest Payable

c. Retained Earnings

d. Copyrights

e. Land

f. Accumulated Depreciation—Furniture

g. Land (held for long-term investment purposes)

h. Unearned Revenue

i. Notes Payable (due in six years)

Learning Objective 2

S4-6 Using the worksheet to prepare financial statements

Answer the following questions:

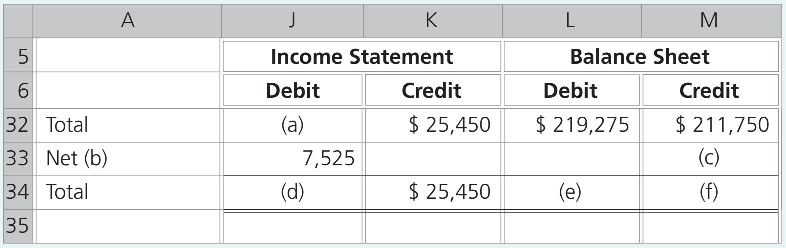
Requirements

1. What type of normal balance does the Retained Earnings account have—debit or credit?
2. Which type of income statement account has the same type of balance as the Retained Earnings account?
3. Which type of income statement account has the opposite type of balance as the Retained Earnings account?
4. What do we call the difference between total debits and total credits on the income statement section of the worksheet?

Learning Objective 2

S4-7 Determining net income using a worksheet

A partial worksheet for Rickman Law Firm is presented below. Solve for the missing information.

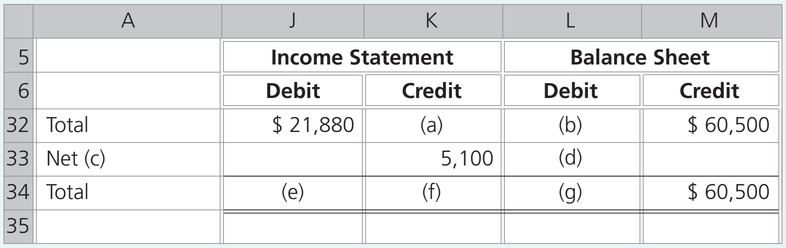


	A	J	K	L	M
5		Income Statement		Balance Sheet	
6		Debit	Credit	Debit	Credit
32	Total	(a)	$ 25,450	$ 219,275	$ 211,750
33	Net (b)	7,525			(c)
34	Total	(d)	$ 25,450	(e)	(f)
35					

Learning Objective 2

S4-8 Determining net loss using a worksheet

A partial worksheet for Ashland Adjusters is presented below. Solve for the missing information.



	A	J	K	L	M
5		Income Statement		Balance Sheet	
6		Debit	Credit	Debit	Credit
32	Total	$ 21,880	(a)	(b)	$ 60,500
33	Net (c)		5,100	(d)	
34	Total	(e)	(f)	(g)	$ 60,500
35					

S4-9 Journalizing closing entries

Learning Objective 3

Brett Teddy Enterprises had the following accounts and normal balances listed on its adjusted trial balance: Service Revenue, $21,200; Salaries Expense, $7,500; Rent Expense, $3,000; Advertising Expense, $2,100; Dividends, $6,400.

Journalize the closing entries for Teddy Enterprises.

S4-10 Posting closing entries directly to T-accounts

Learning Objective 3

The following balances appear on the books of Cedrick Owens Enterprises: Retained Earnings, $20,600; Dividends, $5,500; Service Revenue, $20,200; Salaries Expense, $6,900; Rent Expense $3,600; Advertising Expense, $2,300. All accounts have normal balances.

Requirements

1. The T-accounts have been set up for you. Insert each account's adjusted balance as given (denote as *Adj. Bal.*) at December 31.
2. Post the closing entries to the accounts, denoting posted amounts as *Clos.*
3. Compute the ending balance of Retained Earnings.

S4-11 Identifying accounts included on a post-closing trial balance

Learning Objective 4

For each account listed, identify whether the account would be included on a post-closing trial balance. Signify either Yes (Y) or No (N).

- **a.** Office Supplies
- **b.** Interest Expense
- **c.** Retained Earnings
- **d.** Dividends
- **e.** Service Revenue
- **f.** Accumulated Depreciation—Furniture
- **g.** Rent Expense
- **h.** Unearned Revenue
- **i.** Accounts Payable

S4-12 Identifying steps in the accounting cycle

Learning Objective 5

Review the steps in the accounting cycle, and answer the following questions:

1. What is the first step?
2. Are any steps optional?
3. Which steps are completed throughout the period?
4. Which steps are completed only at the end of the period?
5. What is the last step in the accounting cycle?

S4-13 Calculating the current ratio

Learning Objective 6

End of the Line Montana Refrigeration has these account balances at December 31, 2016:

Notes Payable, long-term	$ 7,900	Accounts Payable	$ 3,600
Prepaid Rent	2,000	Accounts Receivable	6,300
Salaries Payable	1,600	Cash	3,200
Service Revenue	14,100	Depreciation Expense—Equip.	700
Office Supplies	1,200	Equipment	22,000
Accumulated Depreciation—Equip.	6,500	Common Stock	4,100
Advertising Expense	500	Rent Expense	1,900

Requirements

1. Calculate End of the Line Montana Refrigeration's current ratio.
2. How much in *current* assets does End of the Line Montana Refrigeration have for every dollar of *current* liabilities that it owes?

Learning Objective 7
Appendix 4A

S4A-14 Journalizing reversing entries

Lake View Associates accrued $7,000 of Service Revenue at December 31. Lake View Associates received $13,500 on January 15, including the accrued revenue recorded on December 31.

Requirements

1. Record the adjusting entry to accrue Service Revenue.
2. Record the reversing entry.
3. Journalize the cash receipt.

> Exercises

Learning Objective 1

2. Ending Retained Earnings $6,300

E4-15 Preparing the financial statements

The adjusted trial balance for Burlington Advertising Services is presented below:

BURLINGTON ADVERTISING SERVICES
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 14,100	
Accounts Receivable	14,200	
Office Supplies	6,200	
Furniture	19,200	
Accumulated Depreciation—Furniture		$ 14,400
Building	51,500	
Accumulated Depreciation—Building		35,700
Land	18,300	
Accounts Payable		10,200
Salaries Payable		7,400
Unearned Revenue		17,500
Common Stock		32,000
Retained Earnings		37,000
Dividends	20,100	
Service Revenue		40,100
Salaries Expense	28,000	
Supplies Expense	8,600	
Depreciation Expense—Furniture	500	
Depreciation Expense—Building	2,600	
Advertising Expense	11,000	
Total	**$ 194,300**	**$ 194,300**

Requirements

1. Prepare the income statement for the year ending December 31, 2016.
2. Prepare the statement of retained earnings for the year ending December 31, 2016.
3. Prepare the classified balance sheet as of December 31, 2016. Use the report form.

E4-16 Classifying balance sheet accounts

Learning Objective 1

For each account listed, identify the category that it would appear on a classified balance sheet. Use the following categories: Current Assets, Long-term Investments, Plant Assets, Intangible Assets, Current Liabilities, Long-term Liabilities, and Stockholders' Equity. If the item does not belong on the classified balance sheet, put an X.

a. Land (used in operations)
b. Accumulated Depreciation—Equipment
c. Common Stock
d. Service Revenue
e. Investment in Starbucks Corporation (to be held long-term)
f. Accounts Receivable
g. Equipment
h. Buildings
i. Notes Payable (due in 10 years)
j. Unearned Revenue
k. Cash
l. Accounts Payable
m. Prepaid Rent
n. Dividends
o. Land (held for investment purposes)
p. Depreciation Expense

Learning Objectives 1, 6

1. Total Assets $67,000

E4-17 Preparing a classified balance sheet and calculating the current ratio

The adjusted trial balance of Carmen O'Connor Dance Studio Company follows:

CARMEN O'CONNOR DANCE STUDIO COMPANY
Trial Balance
August 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 16,000	
Office Supplies	2,300	
Prepaid Rent	1,000	
Equipment	57,000	
Accumulated Depreciation—Equipment		$ 5,600
Accounts Payable		5,000
Salaries Payable		200
Unearned Revenue		4,400
Notes Payable (long-term)		4,400
Common Stock		15,000
Retained Earnings		33,400
Dividends	1,000	
Service Revenue		18,400
Salaries Expense	4,900	
Rent Expense	1,900	
Depreciation Expense—Equipment	400	
Supplies Expense	1,200	
Utilities Expense	700	
Total	**$ 86,400**	**$ 86,400**

Requirements

1. Prepare the classified balance sheet of Carmen O'Connor Dance Studio Company at August 31, 2016. Use the report form. You must compute the ending balance of Retained Earnings.
2. Compute O'Connor's current ratio at August 31, 2016. One year ago, the current ratio was 1.70. Indicate whether O'Connor's ability to pay current debts has improved, deteriorated, or remained the same.

E4-18 Preparing a worksheet

Learning Objective 2

The unadjusted trial balance of Voice Link at November 30, 2016, follows:

VOICE LINK
Unadjusted Trial Balance
November 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 3,900	
Accounts Receivable	3,700	
Prepaid Rent	1,600	
Office Supplies	3,900	
Equipment	33,400	
Accumulated Depreciation—Equipment		$ 1,500
Accounts Payable		5,100
Salaries Payable		
Common Stock		36,400
Dividends	2,400	
Service Revenue		8,600
Depreciation Expense—Equipment		
Salaries Expense	2,000	
Rent Expense		
Utilities Expense	700	
Supplies Expense		
Total	**$ 51,600**	**$ 51,600**

Additional information at November 30, 2016:

- **a.** Accrued service revenue, $600.
- **b.** Depreciation, $300.
- **c.** Accrued salaries expense, $600.
- **d.** Prepaid rent expired, $900.
- **e.** Office Supplies used, $500.

Requirements

1. Complete Voice Link's worksheet for the month ended November 30, 2016.
2. How much was net income for November?

Note: Exercise E4-19 should be used only after completing Exercise E4-18.

Learning Objectives 1, 2

2\. Ending Retained Earnings $1,800

E4-19 Preparing financial statements from the completed worksheet

Use your answer from Exercise E4-18 to prepare Voice Link's financial statements.

Requirements

1. Complete the income statement for the month ended November 30, 2016.
2. Complete the statement of retained earnings for the month ended November 30, 2016. Assume beginning Retained Earnings was $0.
3. Complete the classified balance sheet as of November 30, 2016. Use the report form.

Learning Objective 3

E4-20 Preparing closing entries from an adjusted trial balance

The adjusted trial balance of Stouse Sign Company follows:

STOUSE SIGN COMPANY
Adjusted Trial Balance
January 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 13,200	
Office Supplies	1,900	
Prepaid Rent	1,300	
Equipment	60,000	
Accumulated Depreciation—Equipment		$ 6,000
Accounts Payable		3,800
Salaries Payable		400
Unearned Revenue		4,900
Notes Payable (long-term)		4,000
Common Stock		47,900
Dividends	1,200	
Service Revenue		16,700
Salaries Expense	3,100	
Rent Expense	1,700	
Depreciation Expense—Equipment	200	
Supplies Expense	400	
Utilities Expense	700	
Total	**$ 83,700**	**$ 83,700**

Requirements

1. Assume Stouse Sign Company has a January 31 year-end. Journalize Stouse's closing entries at January 31.
2. How much net income or net loss did Stouse earn for the year ended January 31? How can you tell?

E4-21 Preparing closing entries from T-accounts

Learning Objective 3

Selected accounts for Kendall Photography December 31, 2016 follow:

Retained Earnings

	53,000

Dividends

15,000	

Service Revenue

	38,000
	3,000

Salaries Expense

33,900	
1,600	

Supplies Expense

2,700	

Depreciation Expense—Furniture

1,200	

Depreciation Expense—Building

6,700	

Requirements

1. Journalize Kendall Photography's closing entries at December 31, 2016.
2. Determine Kendall Photography's ending Retained Earnings balance at December 31, 2016.

E4-22 Determining the effects of closing entries on the Retained Earnings account

Learning Objective 3

Victor Insurance Agency started the year with a beginning Retained Earnings balance of $26,000. During the year, Victor earned $31,000 of Service Revenue and incurred $25,000 of various expenses. Dividends of $16,000 from the business were paid to stockholders. After the closing entries are recorded and posted, what will be the balance of Retained Earnings?

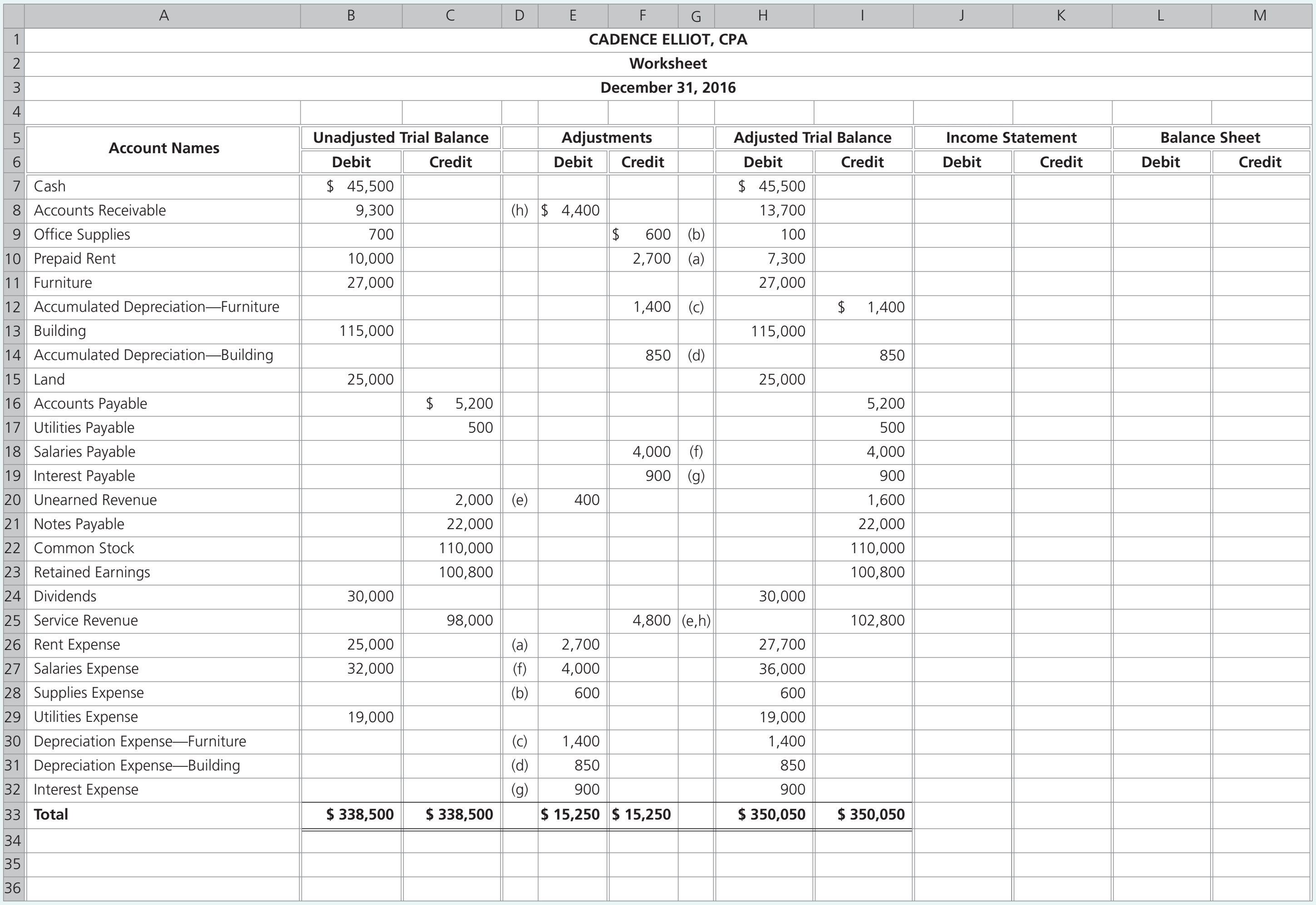
Learning Objectives 2, 3

1. Net Income $16,350

(Requirement 1 only)

E4-23 Preparing a worksheet and closing entries

Cadence Elliot, CPA, had the following partial worksheet:



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**CADENCE ELLIOT, CPA**												
2	**Worksheet**												
3	**December 31, 2016**												
4													
5	**Account Names**	**Unadjusted Trial Balance**			**Adjustments**			**Adjusted Trial Balance**		**Income Statement**		**Balance Sheet**	
6		**Debit**	**Credit**		**Debit**	**Credit**		**Debit**	**Credit**	**Debit**	**Credit**	**Debit**	**Credit**
7	Cash	$ 45,500						$ 45,500					
8	Accounts Receivable	9,300		(h)	$ 4,400			13,700					
9	Office Supplies	700				$ 600	(b)	100					
10	Prepaid Rent	10,000				2,700	(a)	7,300					
11	Furniture	27,000						27,000					
12	Accumulated Depreciation—Furniture					1,400	(c)		$ 1,400				
13	Building	115,000						115,000					
14	Accumulated Depreciation—Building					850	(d)		850				
15	Land	25,000						25,000					
16	Accounts Payable		$ 5,200						5,200				
17	Utilities Payable		500						500				
18	Salaries Payable					4,000	(f)		4,000				
19	Interest Payable					900	(g)		900				
20	Unearned Revenue		2,000	(e)	400				1,600				
21	Notes Payable		22,000						22,000				
22	Common Stock		110,000						110,000				
23	Retained Earnings		100,800						100,800				
24	Dividends	30,000						30,000					
25	Service Revenue		98,000			4,800	(e,h)		102,800				
26	Rent Expense	25,000		(a)	2,700			27,700					
27	Salaries Expense	32,000		(f)	4,000			36,000					
28	Supplies Expense			(b)	600			600					
29	Utilities Expense	19,000						19,000					
30	Depreciation Expense—Furniture			(c)	1,400			1,400					
31	Depreciation Expense—Building			(d)	850			850					
32	Interest Expense			(g)	900			900					
33	**Total**	**$ 338,500**	**$ 338,500**		**$ 15,250**	**$ 15,250**		**$ 350,050**	**$ 350,050**				
34													
35													
36													

Requirements

1. Complete the worksheet.
2. Prepare the closing entries for Cadence Elliot, CPA.

E4-24 Preparing closing entries from an adjusted trial balance; preparing a post-closing trial balance; and calculating the current ratio

Learning Objectives 3, 4, 6

Marty's Bowling Alley's adjusted trial balance as of December 31, 2016 is presented below:

MARTY'S BOWLING ALLEY
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 19,000	
Accounts Receivable	2,700	
Office Supplies	950	
Prepaid Insurance	3,500	
Equipment	46,000	
Accumulated Depreciation—Equipment		$ 12,000
Building	165,000	
Accumulated Depreciation—Building		6,500
Land	28,000	
Accounts Payable		4,500
Utilities Payable		500
Salaries Payable		3,700
Unearned Revenue		1,200
Common Stock		103,000
Retained Earnings		160,025
Dividends	35,000	
Service Revenue		95,000
Insurance Expense	26,000	
Salaries Expense	39,000	
Supplies Expense	1,000	
Utilities Expense	17,000	
Depreciation Expense—Equipment	3,000	
Depreciation Expense—Building	275	
Total	**$ 386,425**	**$ 386,425**

Requirements

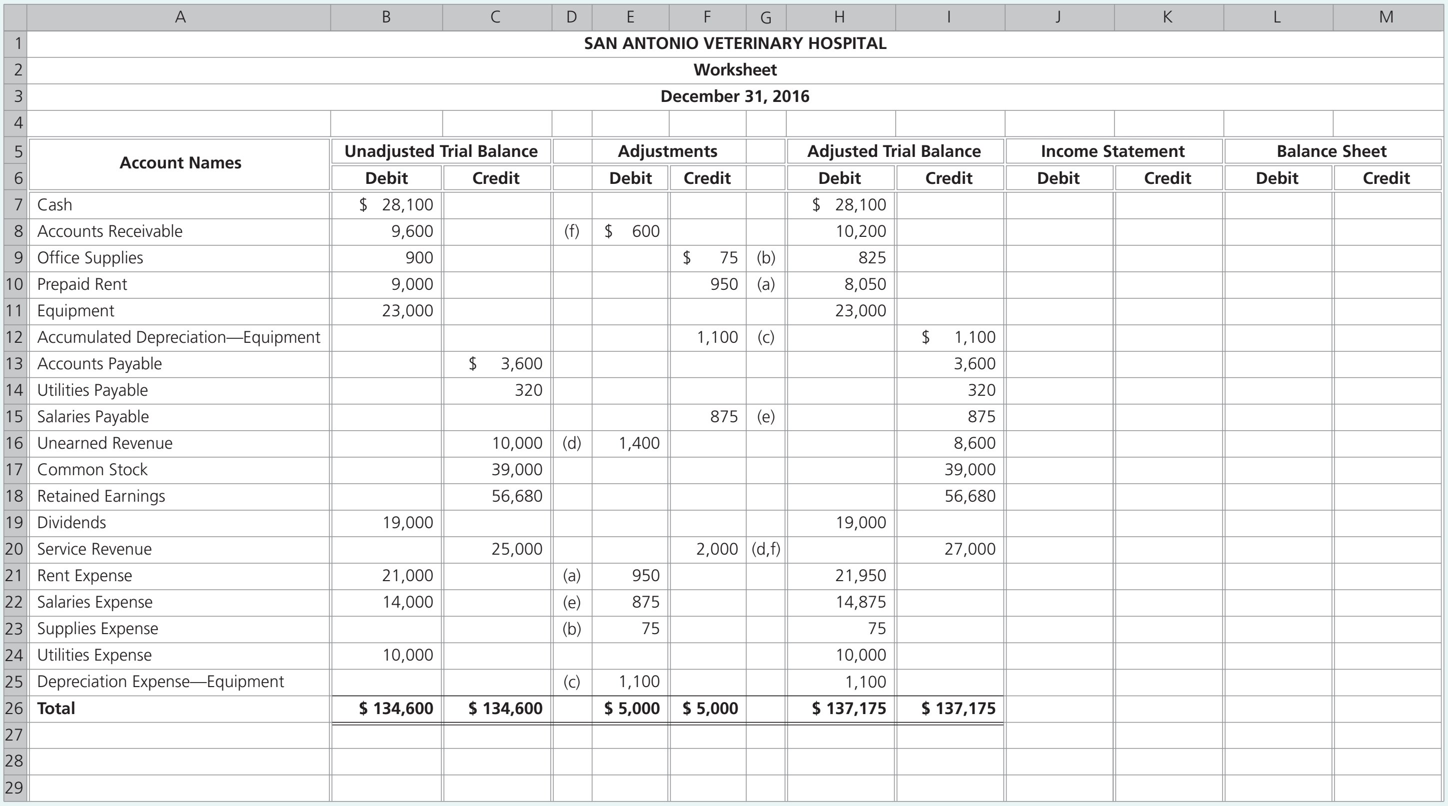
1. Prepare the closing entries for Marty's Bowling Alley.
2. Prepare a post-closing trial balance.
3. Compute the current ratio for Marty's Bowling Alley.

Learning Objectives 2, 3, 4

1. Net Loss $(21,000)

E4-25 Preparing a worksheet, closing entries, and a post-closing trial balance

San Antonio Veterinary Hospital completed the following worksheet as of December 31, 2016.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	SAN ANTONIO VETERINARY HOSPITAL												
2	Worksheet												
3	December 31, 2016												
4													
5	Account Names	Unadjusted Trial Balance		Adjustments				Adjusted Trial Balance		Income Statement		Balance Sheet	
6		Debit	Credit		Debit	Credit		Debit	Credit	Debit	Credit	Debit	Credit
7	Cash	$ 28,100						$ 28,100					
8	Accounts Receivable	9,600		(f)	$ 600			10,200					
9	Office Supplies	900				$ 75	(b)	825					
10	Prepaid Rent	9,000				950	(a)	8,050					
11	Equipment	23,000						23,000					
12	Accumulated Depreciation—Equipment					1,100	(c)		$ 1,100				
13	Accounts Payable		$ 3,600						3,600				
14	Utilities Payable		320						320				
15	Salaries Payable					875	(e)		875				
16	Unearned Revenue		10,000	(d)	1,400				8,600				
17	Common Stock		39,000						39,000				
18	Retained Earnings		56,680						56,680				
19	Dividends	19,000						19,000					
20	Service Revenue		25,000			2,000	(d,f)		27,000				
21	Rent Expense	21,000		(a)	950			21,950					
22	Salaries Expense	14,000		(e)	875			14,875					
23	Supplies Expense			(b)	75			75					
24	Utilities Expense	10,000						10,000					
25	Depreciation Expense—Equipment			(c)	1,100			1,100					
26	**Total**	**$ 134,600**	**$ 134,600**		**$ 5,000**	**$ 5,000**		**$ 137,175**	**$ 137,175**				
27													
28													
29													

Requirements

1. Complete the worksheet for San Antonio Veterinary Hospital.
2. Prepare the closing entries.
3. Prepare a post-closing trial balance.

Learning Objective 7
Appendix 4A

E4A-26 Journalizing reversing entries

Krisp Architects recorded the following adjusting entries as of December 31:

a. Service Revenue accrued, $2,600.
b. Unearned Revenue that has been earned, $400.
c. Office Supplies on hand, $675. The balance of the Office Supplies account was $810.
d. Salaries owed to employees, $850.
e. One month of Prepaid Rent has expired, $2,700.
f. Depreciation on equipment, $12,000.

Journalize any necessary reversing entries for Krisp Architects.

E4A-27 Journalizing reversing entries

Learning Objective 7
Appendix 4A

Ocean View Services had the following unadjusted balances at December 31, 2016: Salaries Payable, $0; Salaries Expense, $1,400. The following transactions have taken place at the end of 2016 and beginning of 2017:

2016	
Dec. 31	Accrued Salaries Expense at December 31, $3,000.
31	Closed the Salaries Expense account.
2017	
Jan. 1	Reversed the accrued salaries. (Requirement 3 only)
4	Paid salaries of $4,400. This payment included the Salaries Payable amount, plus $1,400 for the first few days of January.

Requirements

1. Open T-accounts for Salaries Payable and Salaries Expense using their unadjusted balances at December 31, 2016.
2. Journalize the entries assuming Ocean View Services does not use reversing entries. **Do not record the reversing entry on Jan. 1.** Post to the accounts.
3. Open new T-accounts for Salaries Payable and Salaries Expense using their unadjusted balances at December 31, 2016. Journalize the entries assuming Ocean View Services uses reversing entries. **Don't forget to record the reversing entry on Jan. 1.** Post to the accounts. Compare the balances with Requirement 2 balances.

> Problems Group A

Learning Objectives 1, 3, 4

1. Net Loss $(8,700)

P4-28A Preparing financial statements including a classified balance sheet in report form, preparing and posting closing entries, and preparing a post-closing trial balance

The adjusted trial balance of Elmo Real Estate Appraisal at June 30, 2016, follows:

ELMO REAL ESTATE APPRAISAL
Adjusted Trial Balance
June 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,900	
Accounts Receivable	4,800	
Office Supplies	2,700	
Prepaid Insurance	1,900	
Building	79,000	
Accumulated Depreciation—Building		$ 26,600
Land	12,600	
Accounts Payable		19,300
Interest Payable		8,300
Salaries Payable		1,700
Unearned Revenue		800
Notes Payable (long-term)		42,000
Common Stock		6,000
Retained Earnings		37,000
Dividends	27,100	
Service Revenue		48,400
Insurance Expense	4,000	
Salaries Expense	33,900	
Supplies Expense	200	
Interest Expense	8,300	
Utilities Expense	2,800	
Depreciation Expense—Building	7,900	
Total	**$ 190,100**	**$ 190,100**

Requirements

1. Prepare the company's income statement for the year ended June 30, 2016.
2. Prepare the company's statement of retained earnings for the year ended June 30, 2016.
3. Prepare the company's classified balance sheet in report form at June 30, 2016.
4. Journalize the closing entries.
5. Open the T-accounts using the balances from the adjusted trial balance, and post the closing entries to the T-accounts.
6. Prepare the company's post-closing trial balance at June 30, 2016.

Learning Objectives 1, 3, 6

2. Ending Retained Earnings $61,200

P4-29A Preparing financial statements including a classified balance sheet in report form, preparing closing entries, and using the current ratio to evaluate a company

The adjusted trial balance of Bertrand Irrigation System at December 31, 2016, follows:

BERTRAND IRRIGATION SYSTEM
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 43,700	
Accounts Receivable	47,600	
Office Supplies	3,400	
Prepaid Insurance	6,100	
Equipment	25,000	
Accumulated Depreciation—Equipment		$ 6,700
Building	60,000	
Accumulated Depreciation—Building		24,700
Accounts Payable		41,600
Interest Payable		1,200
Salaries Payable		3,600
Unearned Revenue		1,600
Notes Payable (long-term)		26,200
Common Stock		19,000
Retained Earnings		13,000
Dividends	2,400	
Service Revenue		74,200
Insurance Expense	1,300	
Salaries Expense	16,600	
Supplies Expense	800	
Interest Expense	1,200	
Depreciation Expense—Equipment	2,000	
Depreciation Expense—Building	1,700	
Total	**$ 211,800**	**$ 211,800**

Requirements

1. Prepare the company's income statement for the year ended December 31, 2016.
2. Prepare the company's statement of retained earnings for the year ended December 31, 2016.
3. Prepare the company's classified balance sheet in report form at December 31, 2016.
4. Journalize the closing entries for Bertrand Irrigation System.
5. Compute the company's current ratio at December 31, 2016. At December 31, 2015, the current ratio was 2.4. Did the company's ability to pay current debts improve or deteriorate, or did it remain the same?

Learning Objectives 1, 2, 3

2. Total Assets $88,000

P4-30A Preparing a worksheet, financial statements, and closing entries

The *unadjusted* trial balance of Froyer Investment Advisers at December 31, 2016, follows:

FROYER INVESTMENT ADVISERS
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 34,000	
Accounts Receivable	44,000	
Office Supplies	5,500	
Equipment	22,000	
Accumulated Depreciation—Equipment		$ 19,000
Accounts Payable		22,000
Salaries Payable		
Unearned Revenue		5,000
Notes Payable (long-term)		18,000
Common Stock		24,000
Retained Earnings		15,500
Dividends	34,000	
Service Revenue		92,000
Insurance Expense	3,500	
Salaries Expense	40,000	
Supplies Expense		
Interest Expense	6,500	
Rent Expense	6,000	
Depreciation Expense—Equipment		
Total	**$ 195,500**	**$ 195,500**

Adjustment data at December 31, 2016:

a. Unearned Revenue received during the year, $400.

b. Office Supplies on hand, $2,500.

c. Depreciation for the year, $2,000.

d. Accrued Salaries Expense, $2,500.

e. Accrued Service Revenue, $7,500.

Requirements

1. Prepare a worksheet for Froyer Investment Advisers at December 31, 2016.
2. Prepare the income statement, the statement of retained earnings, and the classified balance sheet in account format.
3. Prepare closing entries.

P4-31A Completing the accounting cycle from adjusting entries to post-closing trial balance with an optional worksheet

Learning Objectives 1, 2, 3, 4, 5, 6

5. Net Income $19,890

The *unadjusted* trial balance of Washington Anvils at December 31, 2016, and the data for the adjustments follow:

WASHINGTON ANVILS
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 19,880	
Accounts Receivable	12,500	
Prepaid Rent	1,820	
Office Supplies	1,600	
Equipment	31,000	
Accumulated Depreciation—Equipment		$ 7,000
Accounts Payable		6,200
Salaries Payable		
Unearned Revenue		5,600
Common Stock		30,000
Retained Earnings		1,600
Dividends	4,000	
Service Revenue		22,500
Salaries Expense	2,100	
Rent Expense		
Depreciation Expense—Equipment		
Supplies Expense		
Total	**$ 72,900**	**$ 72,900**

Adjustment data:

- **a.** Unearned Revenue still unearned at December 31, $2,300.
- **b.** Prepaid Rent still in force at December 31, $1,700.
- **c.** Office Supplies used, $1,000.
- **d.** Depreciation, $320.
- **e.** Accrued Salaries Expense at December 31, $150.

Requirements

1. Prepare the adjusting entries and post to the accounts T-accounts have been opened using the trial balance.
2. Prepare an adjusted trial balance.
3. Complete the worksheet for the year ended December 31, 2016.
4. Prepare the income statement, the statement of retained earnings, and the classified balance

5. Prepare the closing entries, and post to the accounts.
6. Prepare a post-closing trial balance.
7. Calculate the current ratio for the company.

Learning Objectives 1, 2, 3, 4, 5

6. Ending Retained Earnings $13,395

P4-32A Completing the accounting cycle from journal entries to post-closing trial balance with an optional worksheet

On December 1, Bob Wonder began an auto repair shop, Wonder's Quality Automotive. The following transactions occurred during December:

Dec. 1	Wonder contributed $55,000 cash to the business in exchange for shares of common stock.
1	Purchased $9,000 of equipment paying cash.
1	Paid $1,000 for a four-month insurance policy starting on December 1.
9	Paid $16,000 cash to purchase land to be used in operations.
10	Purchased office supplies on account, $2,900.
19	Borrowed $30,000 from the bank for business use. Wonder signed a note payable to the bank in the name of the corporation. The note is due in five years.
22	Paid $1,200 for advertising expenses.
26	Paid $500 on account.
28	The business received a bill for utilities to be paid in January, $230.
31	Revenues earned during the month included $20,500 cash and $3,300 on account.
31	Paid employees' salaries $3,100 and building rent $1,000. Record as a compound entry.
31	The business received $1,050 for auto screening services to be performed next month.
31	Cash dividends of $3,500 were paid to stockholders.

The business uses the following accounts: Cash; Accounts Receivable; Office Supplies; Prepaid Insurance; Equipment; Accumulated Depreciation—Equipment; Land; Accounts Payable; Utilities Payable; Interest Payable; Unearned Revenue; Notes Payable; Common Stock; Retained Earnings; Dividends; Income Summary; Service Revenue; Salaries Expense; Rent Expense; Utilities Expense; Advertising Expense; Supplies Expense; Insurance Expense; Interest Expense; and Depreciation Expense—Equipment.

Adjustment data:

a. Office Supplies used during the month, $900.
b. Depreciation for the month, $150.
c. One month insurance has expired.
d. Accrued Interest Expense, $75.

Requirements

1. Prepare the journal entries, and post to the T-accounts.
2. Prepare an unadjusted trial balance.
3. Complete the worksheet for the month ended December 31, 2016. (optional)
4. Prepare the adjusting entries, and post to the T-accounts.
5. Prepare an adjusted trial balance.

6. Prepare the income statement, the statement of retained earnings, and the classified balance sheet in report form.
7. Prepare the closing entries, and post to the T-accounts.
8. Prepare a post-closing trial balance.

P4A-33A Preparing adjusting entries and reversing entries

Learning Objective 7
Appendix 4A

The unadjusted trial balance and adjustment data of Mildred's Motors at December 31, 2016, follow:

MILDRED'S MOTORS
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,900	
Accounts Receivable	26,700	
Office Supplies	1,500	
Prepaid Insurance	1,800	
Equipment	54,000	
Accumulated Depreciation—Equipment		$ 36,000
Accounts Payable		13,800
Wages Payable		
Unearned Revenue		9,600
Common Stock		19,600
Dividends	2,900	
Service Revenue		16,000
Depreciation Expense—Equipment		
Wages Expense	1,800	
Insurance Expense		
Utilities Expense	1,400	
Supplies Expense		
Total	**$ 95,000**	**$ 95,000**

Adjustment data at December 31, 2016:

a. Depreciation on equipment, $1,900.
b. Accrued Wages Expense, $800.
c. Office Supplies on hand, $600.
d. Prepaid Insurance expired during December, $200.
e. Unearned Revenue earned during December, $4,000.
f. Accrued Service Revenue, $700.

2017 transactions:

a. On January 4, Mildred's Motors paid wages of $1,200. Of this, $800 related to the accrued wages recorded on December 31.
b. On January 10, Mildred's Motors received $1,300 for Service Revenue. Of this, $700 is related to the accrued Service Revenue recorded on December 31.

Requirements

1. Journalize adjusting entries.
2. Journalize reversing entries for the appropriate adjusting entries.
3. Refer to the 2017 data. Journalize the cash payment and the cash receipt that occurred in 2017.

> Problems Group B

Learning Objectives 1, 3, 4

1. Net Loss $(7,200)

P4-34B Preparing financial statements including a classified balance sheet in report form, preparing and posting closing entries, and preparing a post-closing trial balance

The adjusted trial balance of Estella Real Estate Appraisal at June 30, 2016, follows:

ESTELLA REAL ESTATE APPRAISAL
Adjusted Trial Balance
June 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,600	
Accounts Receivable	5,300	
Office Supplies	1,500	
Prepaid Insurance	1,600	
Building	77,000	
Accumulated Depreciation—Building		$ 26,000
Land	13,500	
Accounts Payable		19,300
Interest Payable		8,400
Salaries Payable		1,900
Unearned Revenue		5,300
Notes Payable (long-term)		37,000
Common Stock		3,000
Retained Earnings		37,000
Dividends	27,200	
Service Revenue		48,900
Insurance Expense	4,300	
Salaries Expense	33,000	
Supplies Expense	200	
Interest Expense	8,400	
Utilities Expense	2,500	
Depreciation Expense—Building	7,700	
Total	**$ 186,800**	**$ 186,800**

Requirements

1. Prepare the company's income statement for the year ended June 30, 2016.
2. Prepare the company's statement of retained earnings for the year ended June 30, 2016.
3. Prepare the company's classified balance sheet in report form at June 30, 2016.
4. Journalize the closing entries.
5. Open the T-accounts using the balances from the adjusted trial balance, and post the closing entries to the T-accounts.
6. Prepare the company's post-closing trial balance at June 30, 2016.

P4-35B Preparing financial statements including a classified balance sheet in report form, preparing closing entries, and using the current ratio to evaluate a company

Learning Objectives 1, 3, 6

2. Ending Retained Earnings $58,100

The adjusted trial balance of Blume Irrigation System at December 31, 2016, follows:

BLUME IRRIGATION SYSTEM
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 49,710	
Accounts Receivable	47,500	
Office Supplies	3,790	
Prepaid Insurance	4,600	
Equipment	28,000	
Accumulated Depreciation—Equipment		$ 6,500
Building	56,100	
Accumulated Depreciation—Building		25,000
Accounts Payable		42,000
Interest Payable		1,200
Salaries Payable		3,500
Unearned Revenue		1,300
Notes Payable (long-term)		30,100
Common Stock		22,000
Retained Earnings		8,000
Dividends	2,500	
Service Revenue		75,800
Insurance Expense	800	
Salaries Expense	15,700	
Supplies Expense	1,600	
Interest Expense	1,200	
Depreciation Expense—Equipment	2,000	
Depreciation Expense—Building	1,900	
Total	**$ 215,400**	**$ 215,400**

Requirements

1. Prepare the company's income statement for the year ended December 31, 2016.
2. Prepare the company's statement of retained earnings for the year ended December 31, 2016.
3. Prepare the company's classified balance sheet in report form at December 31, 2016.
4. Journalize the closing entries for Blume Irrigation System.
5. Compute the company's current ratio at December 31, 2016. At December 31, 2015, the current ratio was 1.8. Did the company's ability to pay current debts improve or deteriorate, or did it remain the same?

Learning Objectives 1, 2, 3

2. Total Assets $84,000

P4-36B Preparing a worksheet, financial statements, and closing entries

The *unadjusted* trial balance of Farrell Investment Advisers at December 31, 2016, follows:

FARRELL INVESTMENT ADVISERS
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 25,000	
Accounts Receivable	45,000	
Office Supplies	4,000	
Equipment	26,000	
Accumulated Depreciation—Equipment		$ 17,000
Accounts Payable		22,000
Salaries Payable		
Unearned Revenue		4,000
Notes Payable (long-term)		19,000
Common Stock		30,000
Retained Earnings		4,000
Dividends	25,000	
Service Revenue		89,000
Insurance Expense	7,000	
Salaries Expense	37,000	
Supplies Expense		
Interest Expense	7,500	
Rent Expense	8,500	
Depreciation Expense—Equipment		
Total	**$ 185,000**	**$ 185,000**

Adjustment data at December 31, 2016:

a. Unearned Revenue received during the year, $700.

b. Office Supplies on hand, $1,500.

c. Depreciation for the year, $8,000.

d. Accrued Salaries Expense, $5,000.

e. Accrued Service Revenue, $9,000.

Requirements

1. Prepare a worksheet for Farrell Investment Advisers at December 31, 2016.
2. Prepare the income statement, the statement of retained earnings, and the classified balance sheet in account format.
3. Prepare closing entries.

P4-37B Completing the accounting cycle from adjusting entries to post-closing trial balance with an optional worksheet

Learning Objectives 1, 2, 3, 4, 5, 6

5. Net Income $19,590

The *unadjusted* trial balance of Walsh Anvils at December 31, 2016, and the data for the adjustments follow:

WALSH ANVILS
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 9,980	
Accounts Receivable	14,000	
Prepaid Rent	2,320	
Office Supplies	2,900	
Equipment	32,000	
Accumulated Depreciation—Equipment		$ 6,000
Accounts Payable		6,800
Salaries Payable		
Unearned Revenue		5,200
Common Stock		12,000
Retained Earnings		17,600
Dividends	5,000	
Service Revenue		21,500
Salaries Expense	2,900	
Rent Expense		
Depreciation Expense—Equipment		
Supplies Expense		
Total	**$ 69,100**	**$ 69,100**

Adjustment data:

a. Unearned Revenue still unearned at December 31, $1,100.

b. Prepaid Rent still in force at December 31, $2,100.

c. Office Supplies used, $1,400.

d. Depreciation, $370.

e. Accrued Salaries Expense at December 31, $300.

Requirements

1. Prepare the adjusting entries and post to the accounts. T-accounts have been opened using the trial balance.
2. Prepare an adjusted trial balance.
3. Complete the worksheet for the year ended December 31, 2016.
4. Prepare the income statement, the statement of retained earnings, and the classified balance s
5. Prepare the closing entries, and post to the accounts.
6. Prepare a post-closing trial balance.
7. Calculate the current ratio for the company.

Learning Objectives 1, 2, 3, 4, 5

6. Ending Retained Earnings $4,120

P4-38B Completing the accounting cycle from journal entries to post-closing trial balance with an optional worksheet

On December 1, Curt Walton began an auto repair shop, Walton's Quality Automotive. The following transactions occurred during December:

Dec. 1	Walton contributed $55,000 cash to the business in exchange for shares of common stock.
1	Purchased $9,000 of equipment paying cash.
1	Paid $1,500 for a five-month insurance policy starting on December 1.
9	Paid $16,000 cash to purchase land to be used in operations.
10	Purchased office supplies on account, $2,000.
19	Borrowed $12,000 from the bank for business use. Walton signed a notes payable to the bank in the name of the corporation. The note is due in five years.
22	Paid $1,700 for advertising expenses.
26	Paid $300 on account.
28	The business received a bill for utilities to be paid in January, $180.
31	Revenues earned during the month included $14,000 cash and $2,600 on account.
31	Paid employees' salaries $3,800 and building rent $1,300. Record as a compound entry.
31	The business received $1,400 for auto screening services to be performed next month.
31	Cash dividends of $4,000 was paid to stockholders.

The business uses the following accounts: Cash; Accounts Receivable; Office Supplies; Prepaid Insurance; Equipment; Accumulated Depreciation—Equipment; Land; Accounts Payable; Utilities Payable; Interest Payable; Unearned Revenue; Notes Payable; Common Stock; Retained Earnings; Dividends; Income Summary; Service Revenue; Salaries Expense; Rent Expense; Utilities Expense; Advertising Expense; Supplies Expense; Insurance Expense; Interest Expense; and Depreciation Expense—Equipment.

Adjustment data:

a. Office Supplies used during the month, $1,000.
b. Depreciation for the month, $150.
c. One month insurance has expired.
d. Accrued Interest Expense, $50.

Requirements

1. Prepare the journal entries, and post to the T-accounts.
2. Prepare an unadjusted trial balance.
3. Complete the worksheet for the month ended December 31, 2016. (optional)
4. Prepare the adjusting entries, and post to the T-accounts.
5. Prepare an adjusted trial balance.
6. Prepare the income statement, the statement of retained earnings, and the classified balance sheet in report form.
7. Prepare the closing entries, and post to the T-accounts.
8. Prepare a post-closing trial balance.

P4A-39B Preparing adjusting entries and reversing entries

Learning Objective 7
Appendix 4A

The unadjusted trial balance and adjustment data of Mark's Motors at December 31, 2016, follow:

MARK'S MOTORS
Unadjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,800	
Accounts Receivable	26,600	
Office Supplies	600	
Prepaid Insurance	2,400	
Equipment	53,900	
Accumulated Depreciation—Equipment		$ 41,500
Accounts Payable		13,500
Wages Payable		
Unearned Revenue		5,500
Common Stock		18,900
Dividends	4,200	
Service Revenue		16,300
Depreciation Expense—Equipment		
Wages Expense	1,500	
Insurance Expense		
Utilities Expense	1,700	
Supplies Expense		
Total	**$ 95,700**	**$ 95,700**

Adjustment data at December 31, 2016:

a. Depreciation on equipment, $1,600.
b. Accrued Wages Expense, $1,000.
c. Office Supplies on hand, $100.
d. Prepaid Insurance expired during December, $200.

- **e.** Unearned Revenue earned during December, $4,400.
- **f.** Accrued Service Revenue, $800.

2017 transactions:

- **a.** On January 4, Mark's Motors paid wages of $1,200. Of this, $1,000 related to the accrued wages recorded on December 31.
- **b.** On January 10, Mark's Motors received $1,500 for Service Revenue. Of this, $800 related to the accrued Service Revenue recorded on December 31.

Requirements

1. Journalize adjusting entries.
2. Journalize reversing entries for the appropriate adjusting entries.
3. Refer to the 2017 data. Journalize the cash payment and the cash receipt that occurred in 2017.

> Continuing Problem

This problem continues the Daniels Consulting situation from Problem P3-45 of Chapter 3.

P4-40 Completing the accounting cycle from adjusted trial balance to post-closing trial balance with an optional worksheet

Start from the posted T-accounts and the adjusted trial balance that Daniels Consulting prepared for the company at December 31.

Requirements

1. Complete the worksheet at December 31. (optional)
2. Prepare an income statement for the month ended December 31.
3. Prepare a statement of retained earnings for the month ended December 31.
4. Prepare a classified balance sheet (report form) at December 31.
5. Journalize and post the closing entries at December 31. Denote each closing amount as *Clo.* and each account balance as *Balance*.
6. Prepare a post-closing trial balance.

> Practice Set

P4-41 Completing the accounting cycle from adjusted trial balance to post-closing trial balance with an optional worksheet

Refer to the Practice Set data provided in Chapters 2 and 3 for Crystal Clear Cleaning.

Requirements

1. Prepare an accounting worksheet. (optional)
2. Prepare an income statement, statement of retained earnings, and classified balance sheet using the report format. Assume the Notes Payable is long-term.
3. Prepare closing entries for the month, and post to the accounts.
4. Prepare a post-closing trial balance.

COMPREHENSIVE PROBLEMS

> Comprehensive Problem 1 for Chapters 1–4

Miller Delivery Service completed the following transactions during December 2016:

Dec. 1	Miller Delivery Service began operations by receiving $10,000 cash and a truck with a fair value of $20,000 from Robert Miller. The business issued Miller shares of common stock in exchange for this contribution.
1	Paid $1,000 cash for a four-month insurance policy. The policy begins December 1.
4	Paid $500 cash for office supplies.
12	Performed delivery services for a customer and received $2,000 cash.
15	Completed a large delivery job, billed the customer, $2,500, and received a promise to collect the $2,500 within one week.
18	Paid employee salary, $1,000.
20	Received $15,000 cash for performing delivery services.
22	Collected $800 in advance for delivery service to be performed later.
25	Collected $2,500 cash from customer on account.
27	Purchased fuel for the truck, paying $300 on account. (Credit Accounts Payable)
28	Performed delivery services on account, $700.
29	Paid office rent, $1,600, for the month of December.
30	Paid $300 on account.
31	Cash dividends of $3,000 were paid to stockholders.

Requirements

1. Record each transaction in the journal using the following chart of accounts. Explanations are not required.

Cash	Retained Earnings
Accounts Receivable	Dividends
Office Supplies	Income Summary
Prepaid Insurance	Service Revenue
Truck	Salaries Expense
Accumulated Depreciation—Truck	Depreciation Expense—Truck
Accounts Payable	Insurance Expense
Salaries Payable	Fuel Expense
Unearned Revenue	Rent Expense
Common Stock	Supplies Expense

2. Post the transactions in the T-accounts.
3. Prepare an unadjusted trial balance as of December 31, 2016.
4. Prepare a worksheet as of December 31, 2016. (optional)
5. Journalize the adjusting entries using the following adjustment data and also by reviewing the journal entries prepared in Requirement 1. Post adjusting entries to the T-accounts.

Adjustment data:

- **a.** Accrued Salaries Expense, $1,000.
- **b.** Depreciation was recorded on the truck using the straight-line method. Assume a useful life of five years and a salvage value of $5,000.
- **c.** Prepaid Insurance for the month has expired.
- **d.** Office Supplies on hand, $100.
- **e.** Unearned Revenue earned during the month, $300.
- **f.** Accrued Service Revenue, $650.

6. Prepare an adjusted trial balance as of December 31, 2016.
7. Prepare Miller Delivery Service's income statement and statement of retained earnings for the month ended December 31, 2016, and the classified balance sheet on that date. On the income statement, list expenses in decreasing order by amount—that is, the largest expense first, the smallest expense last.
8. Journalize the closing entries, and post to the T-accounts.
9. Prepare a post-closing trial balance as of December 31, 2016.

> Comprehensive Problem 2 for Chapters 1–4

This comprehensive problem is a continuation of Comprehensive Problem 1. Miller Delivery Service has completed closing entries and the accounting cycle for 2016. The business is now ready to record January 2017 transactions.

Jan. 3	Collected $1,000 cash from customer on account.
5	Purchased office supplies on account, $600.
12	Performed delivery services for a customer and received $2,000 cash.
15	Paid employee salary including the amount owed on December 31, $2,500.
18	Performed delivery services on account, $950.
20	Paid $200 on account.
24	Purchased fuel for the truck, paying $250 cash.
27	Completed the remaining work due for Unearned Revenue.
28	Paid office rent, $1,600, for the month of January.
30	Collected $3,200 in advance for delivery service to be performed later.
31	Cash dividends of $2,000 were paid to stockholders.

Requirements

1. Record each January transaction in the journal. Explanations are not required.
2. Post the transactions in the T-accounts. Don't forget to use the December 31, 2016, ending balances as appropriate.
3. Prepare an unadjusted trial balance as of January 31, 2017.
4. Prepare a worksheet as of January 31, 2017. (optional)
5. Journalize the adjusting entries using the following adjustment data and also by reviewing the journal entries prepared in Requirement 1. Post adjusting entries to the T-accounts.

Adjustment data:

- **a.** Office Supplies on hand, $120.
- **b.** Accrued Service Revenue, $1,200.
- **c.** Accrued Salaries Expense, $1,000.
- **d.** Prepaid Insurance for the month has expired.
- **e.** Depreciation was recorded on the truck for the month.

6. Prepare an adjusted trial balance as of January 31, 2017.

7. Prepare Miller Delivery Service's income statement and statement of retained earnings for the month ended January 31, 2017, and the classified balance sheet on that date. On the income statement, list expenses in decreasing order by amount—that is, the largest expense first, the smallest expense last.

8. Calculate the following ratios as of January 31, 2017, for Miller Delivery Service: return on assets, debt ratio, and current ratio.

CRITICAL THINKING

> Ethical Issue 4-1

Grant Film Productions wishes to expand and has borrowed $100,000. As a condition for making this loan, the bank requires that the business maintain a current ratio of at least 1.50.

Business has been good but not great. Expansion costs have brought the current ratio down to 1.40 on December 15. Rita Grant, owner of the business, is considering what might happen if she reports a current ratio of 1.40 to the bank. One course of action for Grant is to record in December $10,000 of revenue that the business will earn in January of next year. The contract for this job has been signed.

Requirements

1. Journalize the revenue transaction, and indicate how recording this revenue in December would affect the current ratio.

2. Discuss whether it is ethical to record the revenue transaction in December. Identify the accounting principle relevant to this situation, and give the reasons underlying your conclusion.

> Fraud Case 4-1

Arthur Chen, a newly minted CPA, was on his second audit job in the Midwest with a new client called Parson Farm Products. He was looking through the past four years of financials and doing a few ratios when he noticed something odd. The current ratio went from 1.9 in 2016 down to 0.3 in 2017, despite the fact that 2017 had record income. He decided to sample a few transactions from December 2017. He found that many of Parson's customers had returned products to the company because of substandard quality. Chen discovered that the company was clearing the receivables (i.e., crediting Accounts Receivable) but "stashing" the debits in an obscure long-term asset account called "grain reserves" rather than debiting Sales Returns and Allowances to keep the company's income "in the black" (i.e., positive income).

Requirements

1. How did the fraudulent accounting just described affect the current ratio?
2. Can you think of any reasons why someone in the company would want to take this kind of action?

> Financial Statement Case 4-1

This case, based on the balance sheet of **Starbucks Corporation**, will familiarize you with some of the assets and liabilities of that company. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to the Starbucks Corporation Fiscal 2013 Annual Report. Use the Starbucks Corporation balance sheet to answer the following questions.

Requirements

1. Which balance sheet format does Starbucks use?
2. Name the company's largest current asset and largest current liability at September 29, 2013.
3. Compute Starbucks's current ratios at September 29, 2013, and September 30, 2012. Did the current ratio improve, worsen, or hold steady?
4. Under what category does Starbucks report furniture, fixtures, and equipment?
5. What was the cost of the company's fixed assets at September 29, 2013? What was the amount of accumulated depreciation? What was the book value of the fixed assets? See Note 7 for the data.

> Team Project 4-1

Kathy Wintz formed a lawn service business as a summer job. To start the corporation on May 1, 2016, she deposited $1,000 in a new bank account in the name of the business. The $1,000 consisted of a $600 loan from Bank One to her company, Wintz Lawn Service, and $400 of her own money. The company issued $400 of common stock to Wintz. Wintz rented lawn equipment, purchased supplies, and hired other students to mow and trim customers' lawns.

At the end of each month, Wintz mailed bills to the customers. On August 31, she was ready to dissolve the corporation and return to college. Because she was so busy, she kept few records other than the checkbook and a list of receivables from customers.

At August 31, the business's checkbook shows a balance of $2,000, and customers still owe $750. During the summer, the business collected $5,500 from customers. The business checkbook lists payments for supplies totaling $400, and it still has gasoline, weed trimmer cord, and other supplies that cost a total of $50. The business paid employees $1,800 and still owes them $300 for the final week of the summer.

Wintz rented some equipment from Ludwig's Machine Shop. On May 1, the business signed a six-month rental agreement on mowers and paid $600 for the full rental period in advance. Ludwig's will refund the unused portion of the prepayment if the equipment is returned in good shape. In order to get the refund, Wintz has kept the mowers in excellent condition. In fact, the business had to pay $300 to repair a mower.

To transport employees and equipment to jobs, Wintz used a trailer that the business bought for $300. The business estimates that the summer's work used up one-third of the trailer's service potential. The business checkbook lists a payment of

$500 for cash dividends paid during the summer. The business paid the loan back during August. (For simplicity, ignore any interest expense associated with the loan.)

Requirements

1. As a team, prepare the income statement and the statement of retained earnings of Wintz Lawn Service for the four months May 1 through August 31, 2016.
2. Prepare the classified balance sheet (report form) of Wintz Lawn Service at August 31, 2016.
3. Was Wintz's summer work successful? Give your team's reason for your answer.

> Quick Check Answers

1. c **2.** b **3.** b **4.** d **5.** d **6.** c **7.** a **8.** a **9.** a **10A.** b

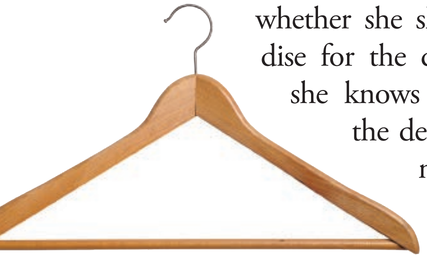
5

Merchandising Operations

Will They Buy It?

Julie Ryski studied the model on the catwalk who was wearing the latest spring fashion. As a retail buyer for a nationwide high-end department store, Julie is responsible for selecting merchandise that will be sold in stores across America. Not only must Julie have a keen eye for the latest fashion designs and seasonal variations, but she must also understand the needs of the department store's customers. Julie enjoys attending fashion shows and other fashion-oriented promotions, but she knows that there is more to her responsibilities than simply selecting the newest spring outfits.

As Julie contemplates the model and whether she should purchase this merchandise for the department store's spring line, she knows that she has to always keep the department store's gross profit in mind. She is responsible for ensuring that the merchandise she buys will be purchased by customers and that it is priced effectively to ensure the highest profit maximization possible. In addition, she must ensure that this merchandise can meet the department store's sales goals and ultimate financial objectives. In the long run, Julie is responsible for all aspects of the merchandise that is sold in the store. She must understand how merchandise is reported on the financial statements, how it is recorded in the accounting records, and how the department store determines gross profit (the difference between the original cost and the retail price). Julie's buying decisions and expertise play a major role in the company's profits. Her pricing decisions ultimately affect the net income of the department store and are a major component of the department store's bottom line.



How Do Businesses Account for Merchandise Inventory?

In this chapter, we begin our exploration of companies that sell goods (called merchandise inventory) to customers. Although many of the accounting concepts you have learned concerning service businesses apply, merchandisers (businesses that sell inventory) have some unique characteristics you must learn to account for. For example, Macy's, Inc., a nationally known premier retailer of the Macy's and Bloomingdale's brands with nearly 840 stores in 45 states, must have a way of accurately tracking the purchase and sale of its inventory. In addition, Macy's needs to determine if it is selling its merchandise at the right sales prices in order to ensure maximum profit. This chapter explores merchandising operations and how these businesses account for merchandise inventory.

Chapter 5 Learning Objectives

1 Describe merchandising operations and the two types of merchandise inventory systems

2 Account for the purchase of merchandise inventory using a perpetual inventory system

3 Account for the sale of merchandise inventory using a perpetual inventory system

4 Adjust and close the accounts of a merchandising business

5 Prepare a merchandiser's financial statements

6 Use the gross profit percentage to evaluate business performance

7 Account for the purchase and sale of merchandise inventory using a periodic inventory system (Appendix 5A)

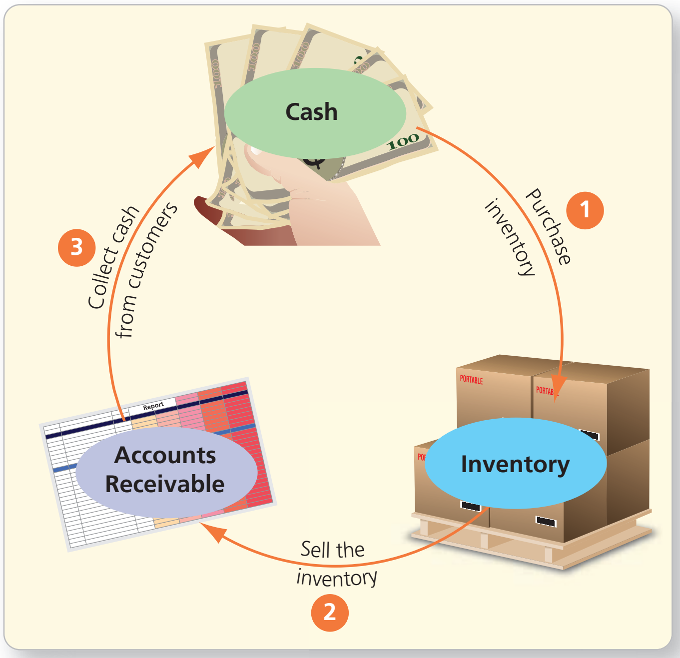
WHAT ARE MERCHANDISING OPERATIONS?

In earlier chapters, you learned about accounting for Smart Touch Learning, an e-learning business that specializes in providing services: online courses in accounting, economics, marketing, and management. In this chapter, you learn about accounting for merchandisers. A **merchandiser** is a business that sells merchandise, or goods, to customers. The merchandise that this type of business sells is called **merchandise inventory**. Merchandisers are often identified as either wholesalers or retailers. A **wholesaler** is a merchandiser that buys goods from a manufacturer and then sells them to retailers. A **retailer** buys merchandise either from a manufacturer or a wholesaler and then sells those goods to consumers.

The Operating Cycle of a Merchandising Business

The operating cycle of a merchandiser is as follows (see Exhibit 5-1):

Exhibit 5-1 | **Operating Cycle of a Merchandiser**



Learning Objective 1
Describe merchandising operations and the two types of merchandise inventory systems

Merchandiser
A business that sells merchandise, or goods, to customers.

Merchandise Inventory
The merchandise that a business sells to customers.

Wholesaler
A type of merchandiser that buys goods from manufacturers and then sells them to retailers.

Retailer
A type of merchandiser that buys merchandise either from a manufacturer or a wholesaler and then sells those goods to consumers.

Vendor
The individual or business from whom a company purchases goods.

1. It begins when the company purchases inventory from an individual or business, called a **vendor**.
2. The company then sells the inventory to a customer.
3. Finally, the company collects cash from customers.

Because the operating cycle of a merchandiser is different than that of a service company, the financial statements differ. Exhibit 5-2 shows how a service entity's financial statements (on the left) differ from a merchandiser's financial statements (on the right). As you can see, merchandisers have some new balance sheet and income statement items.

Cost of Goods Sold (COGS)
The cost of the merchandise inventory that the business has sold to customers.

On the income statement, a merchandising company reports revenues using an account called Sales Revenue rather than the account Service Revenue used by service companies. A merchandiser also reports the cost of merchandise inventory that has been sold to customers, or **Cost of Goods Sold (COGS)**. Cost of Goods Sold is also called *Cost of Sales.* Because COGS is usually a merchandiser's main expense, an intermediary calculation,

Exhibit 5-2 | **Financial Statements of a Service Company and a Merchandising Company**

SERVICE COMPANY
Income Statement
Year Ended December 31, 2016

Service Revenue		$ 230,000
Operating Expenses:		
Salaries Expense	$ 80,000	
Rent Expense	24,000	
Depreciation Expense—Furniture	9,000	
Utilities Expense	3,000	
Total Operating Expenses		116,000
Net Income		$ 114,000

Service Revenue − Operating Expenses = Net Income

MERCHANDISING COMPANY
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 230,000
Cost of Goods Sold		100,000
Gross Profit		130,000
Operating Expenses:		
Salaries Expense	$ 80,000	
Rent Expense	24,000	
Depreciation Expense—Furniture	9,000	
Utilities Expense	3,000	
Total Operating Expenses		116,000
Net Income		$ 14,000

Sales Revenue − Cost of Goods Sold = Gross Profit

A merchandising company reports revenue using Sales Revenue instead of Service Revenue.

Gross Profit − Operating Expenses = Net Income

SERVICE COMPANY
Balance Sheet (Partial)
December 31, 2016

Assets

Current Assets:		
Cash	$ 34,000	
Accounts Receivable	10,800	
Office Supplies	800	
Prepaid Rent	2,100	
Total Current Assets		$ 47,700

MERCHANDISING COMPANY
Balance Sheet (Partial)
December 31, 2016

Assets

Current Assets:		
Cash	$ 34,000	
Accounts Receivable	10,800	
Merchandise Inventory	60,000	
Office Supplies	800	
Prepaid Rent	2,100	
Total Current Assets		$ 107,700

Merchandise Inventory is included in a merchandising company's current assets.

gross profit, is determined before calculating net income. **Gross profit** (also called *gross margin*) is calculated as net Sales Revenue minus Cost of Goods Sold and represents the markup on the merchandise inventory. Gross profit is the extra amount the company receives from the customer (for the merchandise sold) over what the company paid to the vendor. After calculating gross profit, operating expenses are then deducted to determine net income. **Operating expenses** are expenses (other than Cost of Goods Sold) that occur in the entity's major ongoing operations.

Gross Profit
Excess of net Sales Revenue over Cost of Goods Sold.

Operating Expenses
Expenses, other than Cost of Goods Sold, that are incurred in the entity's major ongoing operations.

On the balance sheet, a merchandiser includes Merchandise Inventory in the current assets section representing the value of inventory that the business has on hand to sell to customers. Remember that the assets in the current asset section are listed in order of liquidity; therefore, Merchandise Inventory is usually listed below Accounts Receivable but before the prepaid assets.

Merchandise Inventory Systems: Perpetual and Periodic Inventory Systems

Businesses must have a way to determine the value of merchandise inventory on hand and also the value sold. There are two main types of inventory accounting systems that are used:

- Periodic inventory system
- Perpetual inventory system

The **periodic inventory system** requires businesses to obtain a physical count of inventory to determine the quantities on hand. The system is normally used for relatively inexpensive goods, such as in a small, local store without optical-scanning cash registers that does not keep a running record of every loaf of bread and every key chain that it sells. Restaurants and small retail stores often use the periodic inventory system. Appendix 5A covers the periodic inventory system, which is becoming less and less popular because most accounting is done using computerized methods.

Periodic Inventory System
An inventory system that requires businesses to obtain a physical count of inventory to determine quantities on hand.

The **perpetual inventory system** keeps a running computerized record of merchandise inventory—that is, the number of inventory units and the dollar amounts associated with the inventory are perpetually (constantly) updated. This system achieves better control over the inventory. A modern perpetual inventory system records the following:

Perpetual Inventory System
An inventory system that keeps a running computerized record of merchandise inventory.

- Units purchased and cost amounts.
- Units sold and sales and cost amounts.
- The quantity of merchandise inventory on hand and its cost.

In a perpetual inventory system, merchandise inventory and purchasing systems are integrated with the records for Accounts Receivable and Sales Revenue. For example, major department stores' computers use bar codes to keep up-to-the-minute records and show the current inventory at any time.

In a perpetual inventory system, the "cash register" at the store is a computer terminal that records sales and updates inventory records. **Bar codes are scanned by a laser. The bar coding is linked to merchandise inventory and cost data that are used to keep track of each unique inventory item.** However, note that even in a perpetual inventory system, the business must count inventory at least once a year. The physical count captures inventory transactions that are not recorded by the electronic system (such as misplaced, stolen, or damaged inventory). The count establishes the correct amount of ending inventory for the financial statements and also serves as a check on the perpetual records.

Are the bar codes I see on goods I purchase used to track inventory in the accounting system?

Try It!

Match the accounting terminology to the definitions.

1. Cost of Goods Sold
2. Perpetual inventory system
3. Vendor
4. Periodic inventory system
5. Operating expenses
6. Gross profit

a. An inventory system that requires businesses to obtain a physical count of inventory to determine quantities on hand.

b. Expenses, other than Cost of Goods Sold, that are incurred in the entity's major ongoing operations.

c. Excess of net Sales Revenue over Cost of Goods Sold.

d. The cost of merchandise inventory that the business has sold to customers.

e. The individual or business from whom a company purchases goods.

f. An inventory system that keeps a running computerized record of merchandise inventory.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S5-1. MyAccountingLab

HOW ARE PURCHASES OF MERCHANDISE INVENTORY RECORDED IN A PERPETUAL INVENTORY SYSTEM?

Learning Objective 2
Account for the purchase of merchandise inventory using a perpetual inventory system

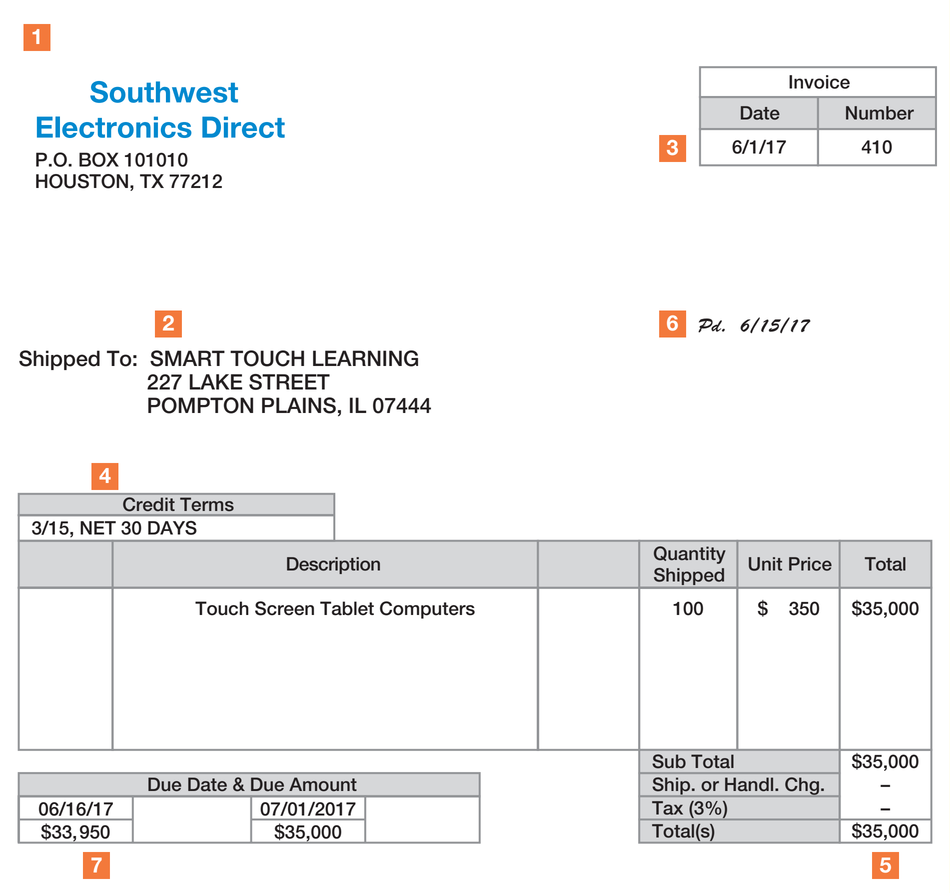
As noted previously, the cycle of a merchandising entity begins with the purchase of merchandise inventory. We will continue to use our fictitious company, Smart Touch Learning, which has now decided to discontinue its service business and instead plans to sell touch screen tablet computers that are preloaded with its e-learning software programs. Smart Touch Learning will purchase these tablets from a vendor. We assume Smart Touch Learning uses a perpetual inventory system.

Invoice
A seller's request for payment from the purchaser.

The vendor (Southwest Electronics Direct) ships the tablet computers to Smart Touch Learning and sends an invoice the same day. The **invoice** is the seller's (Southwest Electronics Direct) request for payment from the buyer (Smart Touch Learning). An invoice is also called a *bill*. Exhibit 5-3 is the bill that Smart Touch Learning receives from Southwest Electronics Direct. After the merchandise inventory is received, Smart Touch Learning pays the vendor.

For Southwest Electronics Direct, the seller, the invoice is called a sales invoice. For Smart Touch Learning, the purchaser, the invoice is called a purchase invoice.

Exhibit 5-3 | **Purchase Invoice**



1

Southwest Electronics Direct
P.O. BOX 101010
HOUSTON, TX 77212

3

Invoice	
Date	Number
6/1/17	410

2

Shipped To: SMART TOUCH LEARNING
227 LAKE STREET
POMPTON PLAINS, IL 07444

6 Pd. 6/15/17

4

Credit Terms
3/15, NET 30 DAYS

	Description		Quantity Shipped	Unit Price	Total
	Touch Screen Tablet Computers		100	$ 350	$35,000

Due Date & Due Amount	
06/16/17	07/01/2017
$33,950	$35,000

7

Sub Total	$35,000
Ship. or Handl. Chg.	–
Tax (3%)	–
Total(s)	$35,000

5

Explanations:

1 The seller is Southwest Electronics Direct.

2 The purchaser is Smart Touch Learning.

3 The invoice date is needed to determine whether the purchaser gets a discount for prompt payment (see 4).

4 Credit terms: If Smart Touch Learning pays within 15 days of the invoice date, it can deduct a 3% discount. Otherwise, the full amount—NET—is due in 30 days.

5 Total invoice amount is $35,000.

6 Smart Touch Learning's payment date. How much did Smart Touch Learning pay? (see 7).

7 Payment occurred 14 days after the invoice date—within the discount period—so Smart Touch Learning paid $33,950 ($35,000–3% discount).

Purchase of Merchandise Inventory

Here we use the actual invoice in Exhibit 5-3 to illustrate the purchasing process. Suppose Smart Touch Learning receives the goods on June 3, 2017, and makes payment on that date (ignore the credit terms on the invoice at this point). Smart Touch Learning records this purchase as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Merchandise Inventory	35,000	
	Cash		35,000
	Purchased inventory for cash.		

A↑↓ = **L** + **E**

Merchandise Inventory↑
Cash↓

The Merchandise Inventory account, an asset, is used only for goods purchased that the business owns and intends to resell to customers. Office Supplies, Equipment, and other assets are recorded in their own accounts.

Assume that on June 3, instead of paying cash, Smart Touch Learning receives the merchandise inventory on account. The purchase of inventory on account is recorded as follows:

A↑		**L↑**	**+**	**E**
Merchandise Inventory↑	=	Accounts Payable↑		

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Merchandise Inventory	35,000	
	Accounts Payable		35,000
	Purchased inventory on account.		

Purchase Discounts

Purchase Discount
A discount that businesses offer to purchasers as an incentive for early payment.

Credit Terms
The payment terms of purchase or sale as stated on the invoice.

Many businesses offer purchasers a discount for early payment. This is called a **purchase discount** from the purchaser's perspective. Southwest Electronics Direct's **credit terms** of "3/15, NET 30 DAYS" mean that Smart Touch Learning can deduct 3% from the total bill (excluding freight charges, if any) if the company pays within 15 days of the invoice date. Otherwise, the full amount—NET—is due in 30 days. These credit terms can also be expressed as "3/15, n/30."

Terms of "n/30" mean that no discount is offered and payment is due 30 days after the invoice date. Most credit terms express the discount, the discount time period, and the final due date. Occasionally, the credit terms are expressed as EOM, which means payment is due at the end of the current month.

If Smart Touch Learning pays on June 15, 2017, which is within the discount period, the cash payment entry would be as follows:

A↓		**L↓**	**+**	**E**
Cash↓ Merchandise Inventory↓	=	Accounts Payable↓		

Date	Accounts and Explanation	Debit	Credit
Jun. 15	Accounts Payable	35,000	
	Cash ($35,000 − $1,050)		33,950
	Merchandise Inventory ($35,000 × 0.03)		1,050
	Paid within discount period.		

When making payment within a discount period, always debit Accounts Payable for the full amount of the invoice; otherwise there will be a balance remaining in the payable account even though the invoice has been paid in full.

The purchase discount is credited to the Merchandise Inventory account because the discount for early payment decreases the actual cost paid for Merchandise Inventory, as shown in the T-account:

Merchandise Inventory

June 3	35,000	1,050	June 15
Bal.	**33,950**		

Accounts Payable

June 15	35,000	35,000	June 3
		Bal.	**0**

Notice that the balance in the Merchandise Inventory account, $33,950, is exactly what was paid for the Merchandise Inventory on June 15, 2017. Also notice that the Accounts Payable account shows that the invoice was paid in full with no remaining balance.

What if a purchaser does not pay for the invoice within the discount period?

What if Smart Touch Learning pays this invoice on June 24, 2017, after the discount period ends? Smart Touch Learning must pay the full $35,000.

In that case, the payment entry is as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 24	Accounts Payable	35,000	
	Cash		35,000
	Paid after discount period.		

$$\left.\begin{array}{c}\textbf{A}\downarrow\\ \hline \text{Cash}\downarrow\end{array}\right\}=\left\{\begin{array}{c}\textbf{L}\downarrow\\ \hline \text{Accounts}\\ \text{Payable}\downarrow\end{array}\right. + \begin{array}{c}\textbf{E}\\ \hline \\ \end{array}$$

Purchase Returns and Allowances

Sellers allow purchasers to return merchandise that is defective, damaged, or otherwise unsuitable. This is called a **purchase return** from the purchaser's perspective. Alternatively, the seller may deduct an allowance from the amount the buyer owes. **Purchase allowances** are granted to the purchaser as an incentive to *keep* goods that are not "as ordered." Together, purchase returns and allowances decrease the buyer's cost of the merchandise inventory.

Assume that Smart Touch Learning has not yet paid the original bill of June 1. Suppose 20 of the tablets purchased on that invoice (Exhibit 5-3) were damaged in shipment. On June 4, Smart Touch Learning returns the goods (tablets, in this case) valued at $7,000 to the vendor and records the purchase return as follows:

Purchase Return
A situation in which sellers allow purchasers to return merchandise that is defective, damaged, or otherwise unsuitable.

Purchase Allowance
An amount granted to the purchaser as an incentive to keep goods that are not "as ordered."

Date	Accounts and Explanation	Debit	Credit
Jun. 4	Accounts Payable	7,000	
	Merchandise Inventory (20 tablets × $350 per tablet)		7,000
	Returned inventory to seller (vendor).		

$$\left.\begin{array}{c}\textbf{A}\downarrow\\ \hline \text{Merchandise}\\ \text{Inventory}\downarrow\end{array}\right\}=\left\{\begin{array}{c}\textbf{L}\downarrow\\ \hline \text{Accounts}\\ \text{Payable}\downarrow\end{array}\right. + \begin{array}{c}\textbf{E}\\ \hline \\ \end{array}$$

ETHICS

How should you handle gifts from vendors?

Anthony Jackson works as a buyer for a large department store that has decided to expand into selling seasonal home decor. Anthony has been charged with the responsibility of selecting the vendor for the new inventory that the store will sell. His purchasing manager has provided him with two possible vendors to choose from. One vendor, Abbey's Wholesalers, has a long-standing relationship with the department store and can be counted on to provide high-quality goods on a timely basis. The other vendor, Zeta Wholesalers, is a new company that doesn't have much of a track record and is just getting established as a home decor wholesaler. Anthony has contacted both vendors to set up meetings to discuss the new inventory and possible credit terms available. The day before the meeting with the potential vendors, Anthony receives a pair of football tickets to a major NFL game in the mail from Abbey's Wholesalers thanking him for his continued relationship with the wholesaler. What should Anthony do?

Solution

Anthony should contact his purchasing manager and explain the situation to him or her. By accepting the football tickets, Anthony might unknowingly be violating the code of ethics of the business. Most businesses have a code of ethics that relates to inventory management and purchasing specifically discussing conflicts of interest. Conflicts of interest occur when a vendor is selected above another vendor because of possible personal financial gain such as receiving gifts or entertainment from the selected vendor. Anthony should carefully discuss the situation with his manager before accepting the tickets.

The exact same entry is made for a purchase allowance granted to the buyer from the seller (vendor). The only difference between a purchase return and a purchase allowance is that, in the case of the allowance, Smart Touch Learning keeps the inventory.

Occasionally, a business will return merchandise inventory or receive an allowance before payment has been made. In this scenario, if the payment of the invoice is made within the discount period, the discount should be calculated net of the return or allowance. Let's look at another example. Suppose that on June 10, Smart Touch Learning purchased 15 tablets from Southwest Electronics Direct on account with credit terms of 3/15, n/30 at a cost of $5,250. Five days later, Smart Touch Learning returned five tablets to the vendor because of damages and received a purchase return of $1,750. When Smart Touch Learning makes payment on June 20 (within the discount period), it will calculate the discount on the amount due less the return or $3,500 ($5,250 − $1,750). Smart Touch Learning's discount will be $105 ($3,500 × 0.03). The entries that Smart Touch Learning would record for these transactions follow:

A↑ = **L↑** + **E**
Merchandise Inventory↑ = Accounts Payable↑

A↓ = **L↓** + **E**
Merchandise Inventory↓ = Accounts Payable↓

A↓ = **L↓** + **E**
Cash↓ Merchandise Inventory↓ = Accounts Payable↓

Date	Accounts and Explanation	Debit	Credit
Jun. 10	Merchandise Inventory	5,250	
	Accounts Payable		5,250
	Purchased inventory on account.		
15	Accounts Payable	1,750	
	Merchandise Inventory		1,750
	Returned inventory to the seller (vendor).		
20	Accounts Payable ($5,250 − $1,750)	3,500	
	Cash ($3,500 − $105)		3,395
	Merchandise Inventory ($3,500 × 0.03)		105
	Paid within discount period net of return.		

DECISIONS

Should the business borrow money to make payment within the discount period?

D&B Grocers recently made a large purchase of merchandise inventory on account with credit terms of 5/10, n/30. D&B does not have the cash flow to pay the invoice within the discount period but will have the necessary funds to make payment by the invoice due date. The grocer is considering borrowing money on its line of credit in order to take advantage of the 5% discount. Should D&B borrow the money to make payment within the discount period?

Solution

D&B should borrow the money only if the amount of interest expense paid on the loan will be less than the discount received. It does not make sense for the grocer to borrow money to make an early payment if in the long run it will end up paying more in interest expense than the discount received.

Transportation Costs

Either the seller or the buyer must pay the transportation cost of shipping merchandise inventory. The purchase agreement specifies FOB (free on board) terms to determine when title to the goods transfers to the purchaser and who pays the freight. Exhibit 5-4 shows that:

- **FOB shipping point** means the buyer takes ownership (title) to the goods after the goods leave the seller's place of business (shipping point). In most cases, the buyer (owner of the goods while in transit) also pays the freight.
- **FOB destination** means the buyer takes ownership (title) to the goods at the delivery destination point. In most cases, the seller (owner of the goods while in transit) also pays the freight.

When merchandisers are required to pay for shipping costs, those costs are classified as either freight in or freight out as follows:

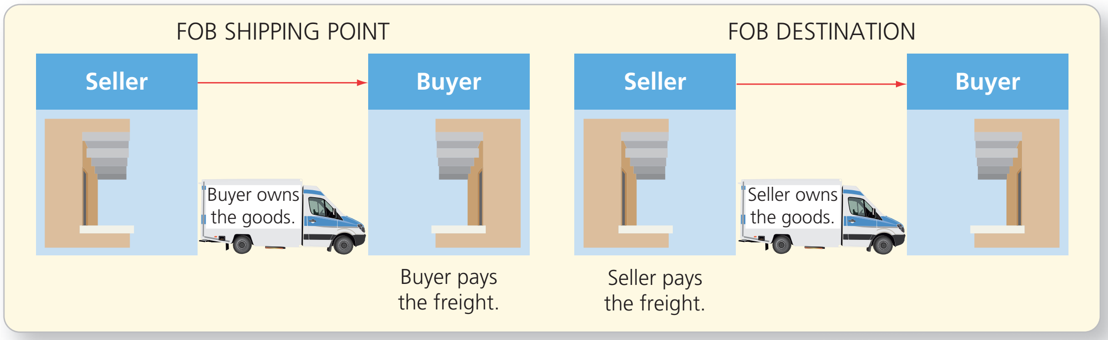
- **Freight in** is the transportation cost to ship goods into the purchaser's warehouse; thus, it is freight on purchased goods.
- **Freight out** is the transportation cost to ship goods out of the seller's warehouse and to the customer; thus, it is freight on goods sold.

FOB Shipping Point
Situation in which the buyer takes ownership (title) to the goods after the goods leave the seller's place of business (shipping point) and the buyer typically pays the freight.

FOB Destination
Situation in which the buyer takes ownership (title) to the goods at the delivery destination point and the seller typically pays the freight.

Freight In
The transportation cost to ship goods into the purchaser's warehouse; therefore, it is freight on purchased goods.

Exhibit 5-4 | **FOB Terms Determine Who Pays the Freight**



Freight In

With the terms FOB shipping point, the buyer owns the goods while they are in transit, so the buyer pays the freight. Because the freight is a cost that must be paid to acquire the inventory, freight in becomes part of the cost of merchandise inventory. As a result, freight in costs are debited to the Merchandise Inventory account. Suppose Smart Touch Learning pays a $60 freight charge on June 3 and makes the following entry:

Freight Out
The transportation cost to ship goods out of the seller's warehouse; therefore, it is freight on goods sold to a customer.

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Merchandise Inventory	60	
	Cash		60
	Paid a freight bill.		

A↑↓		L	+	E
Merchandise Inventory↑ Cash↓	=			

Freight In Within Discount Period

Discounts are computed only on the merchandise purchased from the seller. Discounts are not computed on the transportation costs because there is no discount on freight.

Under FOB shipping point, the seller sometimes prepays the transportation cost as a convenience and lists this cost on the invoice. Assume, for example, Smart Touch Learning makes a $5,000 purchase of goods, coupled with a related freight charge of $400, on June 20 on account with terms of 3/5, n/30. The seller prepays the freight charge. The purchase would be recorded as follows:

A↑	=	L↑	+	E
Merchandise Inventory↑		Accounts Payable↑		

Date	Accounts and Explanation	Debit	Credit
Jun. 20	Merchandise Inventory ($5,000 + $400)	5,400	
	Accounts Payable		5,400
	Purchased inventory on account, including freight.		

If Smart Touch Learning pays within the discount period, the discount will be computed only on the $5,000 merchandise cost, not on the total invoice of $5,400. The $400 freight is not eligible for the discount. So, the 3% discount would be $150 ($5,000 × 0.03). The entry to record the early payment on June 25 follows:

A↓	=	L↓	+	E
Cash↓ Merchandise Inventory↓		Accounts Payable↓		

Date	Accounts and Explanation	Debit	Credit
Jun. 25	Accounts Payable	5,400	
	Cash ($5,400 − $150)		5,250
	Merchandise Inventory ($5,000 × 0.03)		150
	Paid within discount period, including freight.		

Cost of Inventory Purchased

The net cost of merchandise inventory purchased includes the purchase cost of inventory, less purchase returns and allowances, less purchase discounts, plus freight in. Knowing the net cost of inventory allows a business to determine the actual cost of the merchandise purchased and is calculated as follows:

Net Cost of Inventory Purchased = Purchase cost of inventory − Purchase returns and allowances − Purchase discounts + Freight in

Suppose that during the year, Smart Touch Learning buys $281,750 of inventory, returns $61,250 of the goods, and takes a $4,410 early payment discount. The company also pays $14,700 of freight in. The following summary shows Smart Touch Learning's net cost of this merchandise inventory purchased.

Purchases	$ 281,750
Less: Purchase Returns and Allowances	61,250
Purchase Discounts	4,410
Plus: Freight In	14,700
Net Cost of Inventory Purchased	$ 230,790

Try It!

7. Click Computers has the following transactions in July related to the purchase of merchandise inventory.

July 1	Purchase of $20,500 worth of computers on account, terms of 2/10, n/30.
3	Return of $4,000 of the computers to the vendor.
9	Payment made on account.

Journalize the purchase transactions for Click Computers assuming the company uses the perpetual inventory system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S5-2 and S5-3. MyAccountingLab

HOW ARE SALES OF MERCHANDISE INVENTORY RECORDED IN A PERPETUAL INVENTORY SYSTEM?

Learning Objective 3
Account for the sale of merchandise inventory using a perpetual inventory system

After a company buys merchandise inventory, the next step is to sell the goods. We shift now to the selling side and follow Smart Touch Learning through a sequence of selling transactions using the perpetual inventory system.

Sale of Merchandise Inventory

Sales of retailers, such as Smart Touch Learning, are often made for cash. Suppose Smart Touch Learning sold two tablets for cash on June 19, 2017, to a customer and issued the sales invoice in Exhibit 5-5. To the seller, a sales invoice is a bill showing what amount the customer must pay.

Exhibit 5-5 Sales Invoice

Date: June 19, 2017

Invoice #582

STL SMART TOUCH LEARNING

227 LAKE STREET
POMPTON PLAINS, IL 07444

Quantity	Item	Unit Price	Total
2	Touch Screen Tablet Computers	$500	$1,000
Total			$1,000

Sales Revenue
The amount that a merchandiser earns from selling its inventory.

The amount a business earns from selling merchandise inventory is called **Sales Revenue** (also called *Sales*). At the time of the sale, two entries must be recorded in the perpetual inventory system. One entry records the Sales Revenue and the Cash (or Accounts Receivable) at the time of the sale. The second entry records Cost of Goods Sold (debit the expense) and reduces the Merchandise Inventory (credit the asset). Remember, Cost of Goods Sold (COGS) is an expense account and represents the cost of inventory that has been sold to customers.

To record the sale by Smart Touch Learning, two journal entries must be recorded. The first journal entry records the cash sale of $1,000 by debiting Cash and crediting Sales Revenue. A second journal entry must also be made to record the expense and decrease the Merchandise Inventory balance. Suppose these goods sold by Smart Touch Learning cost $700. The second journal entry would transfer the $700 from the Merchandise Inventory account to the Cost of Goods Sold account, as follows:

A↑		L	+	E↑
Cash↑	=			Sales Revenue↑

A↓		L	+	E↓
Merchandise Inventory↓	=			Cost of Goods Sold↑

This entry records the sales revenue.

This entry records the expense and the reduction of merchandise inventory.

Date	Accounts and Explanation	Debit	Credit
Jun. 19	Cash	1,000	
	Sales Revenue		1,000
	Cash sale.		
19	Cost of Goods Sold	700	
	Merchandise Inventory		700
	Recorded the cost of goods sold.		

The Cost of Goods Sold account keeps a current balance throughout the period in a perpetual inventory system of the cost of merchandise inventory sold. In this example, Cost of Goods Sold is $700 (the cost to Smart Touch Learning) rather than $1,000, the selling price (retail price) of the goods. Cost of Goods Sold is always based on the company's cost, not the retail price.

Merchandise Inventory

Bal.	xx,xxx	700	June 19

Cost of Goods Sold

June 19	700	

Many sales are made on account (on credit) instead of with cash. Now let's assume that Smart Touch Learning sold 10 tablets for $500 each, making a $5,000 (10 tablets × $500 per tablet) sale on account with terms of 2/10, n/30 on June 21. The goods cost $3,500. The entries to record the sale and cost of goods sold follow:

A↑		L	+	E↑
Accounts Receivable↑	=			Sales Revenue↑

A↓		L	+	E↓
Merchandise Inventory↓	=			Cost of Goods Sold↑

Date	Accounts and Explanation	Debit	Credit
Jun. 21	Accounts Receivable	5,000	
	Sales Revenue		5,000
	Sale on account.		
21	Cost of Goods Sold	3,500	
	Merchandise Inventory		3,500
	Recorded the cost of goods sold.		

Sales Discounts

Many sellers offer customers a discount for early payment. We saw that purchase discounts decrease the cost of inventory purchases. In the same way, **sales discounts** decrease the net amount of revenue earned on sales. The Sales Discounts account is a contra account to Sales Revenue. Recall that a contra account has the opposite normal balance of its companion account. So, Sales Discounts is a contra revenue account and has a normal debit balance.

Sales Discounts
Reduction in the amount of cash received from a customer for early payment.

Assume the customer that purchased the tablets on June 21 made payment on June 30, within the discount period. Smart Touch Learning will collect $4,900—the $5,000 amount owed less the 2 percent discount, $100 ($5,000 × 0.02). Smart Touch Learning will record the collection of cash on the receivable and the corresponding sales discount as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 30	Cash ($5,000 − $100)	4,900	
	Sales Discounts ($5,000 × 0.02)	100	
	Accounts Receivable		5,000
	Cash collection within the discount period.		

A↓		L	+	E↓
Cash↑ Accounts Receivable↓	=			Sales Discounts↑

An increase in the Sales Discount contra account is recorded as a debit. This increase reduces the overall Sales Revenue of the company, which decreases equity.

Notice that Smart Touch Learning credited Accounts Receivable for the full amount of the invoice. As shown in the following T-account, by doing this, Smart Touch Learning has accurately shown that the invoice was paid in full with no remaining balance.

Accounts Receivable			
June 21	5,000	5,000	June 30
Bal.	**0**		

Assume instead that the customer did not pay the invoice within the discount period, but paid on July 15. The customer would instead pay the full amount of $5,000 and Smart Touch Learning would record the collection of cash as follows:

Date	Accounts and Explanation	Debit	Credit
Jul. 15	Cash	5,000	
	Accounts Receivable		5,000
	Cash collection after the discount period.		

A↑↓		L	+	E
Cash↑ Accounts Receivable↓	=			

Sales Returns and Allowances

After making a sale, Smart Touch Learning may have customers that return goods, asking for a refund or credit to the customer's account. Or the company may instead grant a sales allowance to encourage the customer to accept the nonstandard goods. Such an allowance reduces the future cash collected from the customer. The return of goods or granting of an allowance is called **Sales Returns and Allowances**. Similar to

Sales Returns and Allowances
Decreases in the seller's receivable from a customer's return of merchandise or from granting the customer an allowance from the amount owed to the seller.

Sales Discounts, the Sales Returns and Allowances account is a contra account to Sales Revenue and has a normal debit balance.

Sales Return

Assume that the customer has not yet paid the original bill of June 21. Suppose, on June 25, the customer returns three of the tablets that were sold for $1,500, with a cost of goods sold of $1,050. When recording a return of merchandise, the seller must record two journal entries: one to record the sales return and decrease the receivable ($1,500) and the other to update the Merchandise Inventory account for the cost of the returned merchandise ($1,050). Smart Touch Learning will record the following two journal entries when the merchandise is returned:

A↓	=	**L**	+	**E↓**
Accounts Receivable↓				Sales Returns and Allowances↑

A↑	=	**L**	+	**E↑**
Merchandise Inventory↑				Cost of Goods Sold↓

This entry records the sales returns and allowances.

This entry records the return of the merchandise.

Date	Accounts and Explanation	Debit	Credit
Jun. 25	Sales Returns and Allowances	1,500	
	Accounts Receivable		1,500
	Received returned goods.		
25	Merchandise Inventory	1,050	
	Cost of Goods Sold		1,050
	Placed goods back in inventory.		

By recording the above journal entries, the Sales Returns and Allowances account increases and the Accounts Receivable account decreases. The seller will not collect cash for the returned goods. In addition, the Merchandise Inventory account increases to reflect the returned goods, but the Cost of Goods Sold account must be decreased because the goods are no longer considered sold.

Sales Allowance

When a seller grants a sales allowance, there are no returned goods from the customer. Therefore, there is no second entry to adjust the Merchandise Inventory account. Suppose that on June 28 Smart Touch Learning grants a $100 sales allowance for goods damaged in transit. A sales allowance is recorded as follows:

A↓	=	**L**	+	**E↓**
Accounts Receivable↓				Sales Returns and Allowances↑

Date	Accounts and Explanation	Debit	Credit
Jun. 28	Sales Returns and Allowances	100	
	Accounts Receivable		100
	Granted a sales allowance for damaged goods.		

After the return and allowance have been posted, the Accounts Receivable balance related to the June 21 sale is $3,400, as follows:

Accounts Receivable

June 21	5,000	1,500	June 25
		100	June 28
Bal.	**3,400**		

Sales Returns and Allowances Within Discount Period

If sales returns and allowances occur before the discount period has expired, any discount allowed would be calculated net of the returns and allowances. For example, suppose that on June 30, Smart Touch Learning receives payment on the receivable. The company's cash receipt is $3,332, and the entry recorded is as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 30	Cash ($3,400 − $68)	3,332	
	Sales Discounts ($3,400 × 0.02)	68	
	Accounts Receivable		3,400
	Cash collection within discount period net of return and allowance.		

A↓	=	L + E↓
Cash↑ Accounts Receivable↓		Sales Discounts↑

Transportation Costs—Freight Out

Remember that a freight out expense is one in which the seller pays freight charges to ship goods to customers. Freight out is a delivery expense to the seller. Delivery expense is an operating expense and is debited to the Delivery Expense account. For example, assume Smart Touch Learning paid $30 to ship goods to a customer on June 21. The entry to record that payment is as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 21	Delivery Expense	30	
	Cash		30
	Paid a freight bill.		

A↓	=	L + E↓
Cash↓		Delivery Expense↑

Net Sales Revenue and Gross Profit

Net Sales Revenue is calculated as Sales Revenue less Sales Returns and Allowances and Sales Discounts. Net Sales Revenue is the amount a company has earned on sales of merchandise inventory after sales returns and allowances and sales discounts have been taken out.

Net Sales Revenue
The amount a company has earned on sales of merchandise inventory after returns, allowances, and discounts have been taken out. Sales Revenue less Sales Returns and Allowances and Sales Discounts.

Net Sales Revenue = Sales Revenue − Sales Returns and Allowances − Sales Discounts

Suppose during the year Smart Touch Learning sells $297,500 of merchandise inventory, receives $11,200 of sales returns and allowances, and accepts $5,600 of early payment discounts. The following summary shows Smart Touch Learning's net sales revenue.

Sales Revenue	$ 297,500
Less: Sales Returns and Allowances	11,200
Sales Discounts	5,600
Net Sales Revenue	$ 280,700

After determining net sales revenue, Smart Touch Learning can then calculate its gross profit. Remember, gross profit is the markup on the merchandise inventory and is calculated as net sales revenue minus cost of goods sold. For this example, assume Smart Touch Learning's Cost of Goods Sold is $199,500; its gross profit is calculated as follows:

Net Sales Revenue	$ 280,700
Less: Cost of Goods Sold	199,500
Gross Profit	$ 81,200

In this chapter, we provide you with the amount of cost of goods sold. You will learn how to calculate cost of goods sold in the next chapter.

Gross profit, along with net income, is a measure of a business's success. A sufficiently high gross profit is vital to a merchandiser. The gross profit is reported on the merchandiser's income statement and is the sum of the gross profits on all merchandise sold. The gross profit must cover the company's operating expenses for the company to survive.

Try It!

8. Click Computers has the following transactions in July related to the sale of merchandise inventory.

July 12	Sold computers on account for $8,000 to a customer, terms 3/15, n/30. The cost of the computers is $4,800.
21	Accepted a $1,000 return from the customer from July 12. The computer returned had a cost of $600.
26	Received payment from the customer on balance due.

Journalize the sales transactions for Click Computers assuming the company uses the perpetual inventory system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S5-4 and S5-5. MyAccountingLab

WHAT ARE THE ADJUSTING AND CLOSING ENTRIES FOR A MERCHANDISER?

Learning Objective 4
Adjust and close the accounts of a merchandising business

A merchandiser adjusts and closes accounts the same way a service entity does. If a worksheet is used, the unadjusted trial balance is entered, and the worksheet is completed to determine net income or net loss.

Adjusting Merchandise Inventory Based on a Physical Count

The Merchandise Inventory account should stay current at all times in a perpetual inventory system. However, the actual amount of inventory on hand may differ from what the books show. This difference can occur because of theft, damage, and errors and is referred to as **inventory shrinkage**. For this reason, businesses take a physical count of inventory *at least* once a year. The most common time to count inventory is at the end of the fiscal year. The business then adjusts the Merchandise Inventory account based on the physical count. Smart Touch Learning must record an adjusting entry to account for this lost inventory.

Inventory Shrinkage
The loss of inventory that occurs because of theft, damage, and errors.

Smart Touch Learning's Merchandise Inventory account shows an unadjusted balance of $31,530. With no shrinkage—due to theft or error—the business should have inventory costing $31,530. But on December 31, Smart Touch Learning counts the inventory on hand, and the total cost comes to only $31,290.

Adjusting entry = Merchandise inventory balance before adjustment − Actual merchandise inventory on hand = $31,530 − $31,290 = $240

Smart Touch Learning records this adjusting entry for inventory shrinkage:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Cost of Goods Sold	240	
	Merchandise Inventory		240
	Adjustment for inventory shrinkage.		

A↓	=	**L**	+	**E↓**
Merchandise Inventory↓				Cost of Goods Sold↑

This entry brings Merchandise Inventory to its correct balance.

Merchandise Inventory

Unadj. Bal.	31,530	240	Adj.	Dec. 31
Bal.	**31,290**			

Closing the Accounts of a Merchandiser

Exhibit 5-6 (on the next page) presents Smart Touch Learning's adjusted trial balance and closing entries for the year, which are similar to those you have already learned, except for the new accounts (highlighted in blue). Closing still means to zero out all temporary accounts (accounts that aren't on the balance sheet).

The four-step closing process for a merchandising company follows:

Step 1: Make the revenue accounts equal zero via the Income Summary account.

Step 2: Make expense accounts and other temporary accounts with a debit balance (Sales Returns and Allowances and Sales Discounts) equal zero via the Income Summary account.

Step 3: Make the Income Summary account equal zero via the Retained Earnings account. This closing entry transfers net income (or net loss) to Retained Earnings.

Step 4: Make the Dividends account equal zero via the Retained Earnings account.

Exhibit 5-6 Adjusted Trial Balance and Closing Entries

SMART TOUCH LEARNING
Adjusted Trial Balance
December 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 8,810	
Accounts Receivable	4,400	
Merchandise Inventory	31,290	
Office Supplies	100	
Prepaid Rent	4,000	
Furniture	18,000	
Accumulated Depreciation—Furniture		$ 2,100
Building	60,000	
Accumulated Depreciation—Building		1,750
Land	20,000	
Accounts Payable		10,800
Utilities Payable		2,500
Salaries Payable		1,500
Interest Payable		300
Unearned Revenue		900
Income Tax Payable		3,780
Notes Payable		60,000
Common Stock		48,000
Retained Earnings		3,550
Dividends	10,000	
Sales Revenue		297,500
Sales Returns and Allowances	11,200	
Sales Discounts	5,600	
Cost of Goods Sold	199,500	
Salaries Expense	15,000	
Rent Expense	13,000	
Utilities Expense	11,300	
Insurance Expense	6,500	
Depreciation Expense—Furniture	1,800	
Depreciation Expense—Building	1,500	
Advertising Expense	2,400	
Interest Expense	2,300	
Delivery Expense	1,600	
Supplies Expense	600	
Income Tax Expense	3,780	
Total	**$ 432,680**	**$ 432,680**

Temporary accounts that are closed.

Exhibit 5-6 | **(Continued)**

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Sales Revenue	297,500	
	Income Summary		297,500
	To close revenue.		
31	Income Summary	276,080	
	Sales Returns and Allowances		11,200
	Sales Discounts		5,600
	Cost of Goods Sold		199,500
	Salaries Expense		15,000
	Rent Expense		13,000
	Utilities Expense		11,300
	Insurance Expense		6,500
	Depreciation Expense—Furniture		1,800
	Depreciation Expense—Building		1,500
	Advertising Expense		2,400
	Interest Expense		2,300
	Delivery Expense		1,600
	Supplies Expense		600
	Income Tax Expense		3,780
	To close expenses and other debit accounts.		
31	Income Summary	21,420	
	Retained Earnings		21,420
	To close Income Summary.		
31	Retained Earnings	10,000	
	Dividends		10,000
	To close Dividends.		

A = **L** + **E↑↓**
Sales Revenue↓
Income Summary↑

A = **L** + **E↑↓**
Income Summary↓
Sales Returns and Allowances↓
Sales Discounts↓
Expenses↓

A = **L** + **E↑↓**
Income Summary↓
Retained Earnings↑

A = **L** + **E↑↓**
Retained Earnings↓
Dividends↓

Income Summary

Clos. 2	276,080	297,500	Clos. 1
		21,420	Bal.
Clos. 3	21,420		
		0	**Bal.**

Retained Earnings

		3,550	Adj. Bal.
Clos. 4	10,000	21,420	Clos. 3
		14,970	**Bal.**

Dividends

Adj. Bal.	10,000		
		10,000	Clos. 4
Bal.	**0**		

Worksheet for a Merchandising Business—Perpetual Inventory System

The worksheet of a merchandiser is similar to the worksheet for a service business. The main new account is the Merchandise Inventory account, which must be adjusted based on a physical count due to inventory shrinkage. Also, the merchandiser's worksheet carries the other new merchandising accounts (Sales Revenue, Sales Returns and Allowances, Sales Discounts, Delivery Expense, and Cost of Goods Sold). Worksheet procedures are the same as for a service business. The sum of the unadjusted trial balance amounts, plus or minus the adjustments, equals the adjusted trial balance amounts. The revenues and expenses are then moved to the income statement columns, and the assets, liabilities, and equity amounts are moved to the balance sheet columns.

Try It!

9. Click Computers's Merchandise Inventory account at year-end is showing a balance of $43,000. The physical count of inventory came up with $42,500. Journalize the adjusting entry needed to account for the inventory shrinkage. The company uses the perpetual inventory system.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S5-6 and S5-7. MyAccountingLab

HOW ARE A MERCHANDISER'S FINANCIAL STATEMENTS PREPARED?

Learning Objective 5
Prepare a merchandiser's financial statements

The financial statements that you have learned for a service business are also used by a merchandiser. However, the merchandiser's financial statements will contain the new accounts that have been introduced in this chapter. Let's take a look at some of the differences for a merchandising business.

Income Statement

As you have learned, the balance sheet can appear in two formats:

- The report format (assets at top, liabilities and stockholders' equity at bottom)
- The account format (assets at left, liabilities and stockholders' equity at right)

There are also two formats for the income statement:

- The single-step format
- The multi-step format

Single-Step Income Statement

Single-Step Income Statement
Income statement format that groups all revenues together and then lists and deducts all expenses together without calculating any subtotals.

The **single-step income statement** is the income statement format that you first learned. It groups all revenues together and all expenses together without calculating other subtotals. Many companies use this format. The single-step format clearly distinguishes revenues from expenses and works well for service entities because they have no gross profit to report. Exhibit 5-7 shows a single-step income statement for Smart Touch Learning.

Exhibit 5-7 **Single-Step Income Statement**

SMART TOUCH LEARNING
Income Statement
Year Ended December 31, 2017

Revenues:		
Net Sales Revenue		$ 280,700
Expenses:		
Cost of Goods Sold	$ 199,500	
Salaries Expense	15,000	
Rent Expense	13,000	
Utilities Expense	11,300	
Insurance Expense	6,500	
Depreciation Expense—Furniture	1,800	
Depreciation Expense—Building	1,500	
Advertising Expense	2,400	
Interest Expense	2,300	
Delivery Expense	1,600	
Supplies Expense	600	
Income Tax Expense	3,780	
Total Expenses		259,280
Net Income		**$ 21,420**

IFRS

Cost of Goods Sold represents a *functional* expense. Such expenses explain the purpose of the cost incurred. IFRS allows companies to present expenses according to their function or nature. For example, expenses are described as salaries, utilities, or advertising expenses.

Multi-Step Income Statement

A **multi-step income statement** lists several important subtotals. In addition to net income (the bottom line), it also reports subtotals for gross profit, operating income (also called *income from operations*), and income before income tax expense. The multi-step income statement for Smart Touch Learning appears in Exhibit 5-8 (on the next page).

Multi-Step Income Statement
Income statement format that contains subtotals to highlight significant relationships. In addition to net income, it reports gross profit and operating income.

The income statement begins with net sales revenue, cost of goods sold, and gross profit. Next, the operating expenses, those expenses other than cost of goods sold, are listed. Both merchandisers and service companies report operating expenses in two categories:

- **Selling expenses** are expenses related to marketing and selling the company's goods and services. These include sales salaries, sales commissions, advertising, depreciation on store buildings and equipment, store rent, utilities on store buildings, property taxes on store buildings, and delivery expense.
- **Administrative expenses** include expenses *not* related to marketing the company's goods and services. These include office expenses, such as the salaries of the executives and office employees; depreciation on office buildings and equipment; rent other than on stores (for example, rent on the administrative office); utilities other than on stores (for example, utilities on the administrative office); and property taxes on the administrative office building.

Selling Expenses
Expenses related to marketing and selling the company's goods and services.

Administrative Expenses
Expenses incurred that are not related to marketing the company's goods and services.

Gross profit minus operating expenses equals **operating income** (also called *income from operations*). Operating income measures the results of the entity's major ongoing activities (normal operations).

Operating Income
Measures the results of the entity's major ongoing activities. Gross profit minus operating expenses.

Exhibit 5-8 | **Multi-Step Income Statement**

SMART TOUCH LEARNING
Income Statement
Year Ended December 31, 2017

Gross Profit	Sales Revenue	$ 297,500	
	Less: Sales Returns and Allowances	11,200	
	Sales Discounts	5,600	
	Net Sales Revenue		$ 280,700
	Cost of Goods Sold		199,500
	Gross Profit		81,200
Operating Income	Operating Expenses:		
	Selling Expenses:		
	Salaries Expense	8,100	
	Rent Expense	7,300	
	Advertising Expense	2,400	
	Depreciation Expense	2,200	
	Delivery Expense	1,600	
	Total Selling Expenses	21,600	
	Administrative Expenses:		
	Utilities Expense	11,300	
	Salaries Expense	6,900	
	Insurance Expense	6,500	
	Rent Expense	5,700	
	Depreciation Expense	1,100	
	Supplies Expense	600	
	Total Administrative Expenses	32,100	
	Total Operating Expenses		53,700
	Operating Income		27,500
Other Revenues and (Expenses) and Income Before Income Tax Expense	Other Revenues and (Expenses):		
	Interest Expense	(2,300)	
	Total Other Revenues and (Expenses)		(2,300)
	Income Before Income Tax Expense		$ 25,200
Income Tax Expense and Net Income	Income Tax Expense		3,780
	Net Income		**$ 21,420**

Other Revenues and Expenses Revenues or expenses that are outside the normal, day-to-day operations of a business, such as a gain or loss on the sale of plant assets or interest expense.

Income Tax Expense Expense incurred by a corporation related to federal and state income taxes.

The next section of the income statement is **other revenues and expenses**. This category reports revenues and expenses that fall outside the business's main, day-to-day, regular operations. Examples include interest revenue, interest expense, and gains and losses on the sale of plant assets. These examples have nothing to do with the business's "normal" operations. As a result, they are classified as "other" items.

Lastly, corporations are required to pay income tax. Therefore, the last section of the income statement is the **income tax expense** section. This section reports the federal and state income taxes that are incurred by the corporation. The calculation of income tax expense is complicated and will be covered in later accounting courses and is only presented here for informational purposes.

Statement of Retained Earnings and the Balance Sheet

A merchandiser's statement of retained earnings looks exactly like that of a service business. The balance sheet will also look the same as for a service business, except merchandisers have an additional current asset, Merchandise Inventory. Service businesses do not have merchandise inventory.

Try It!

10. Capital City Motorcycle's selected accounts as of December 31, 2016, follow:

Selling Expenses	$ 10,500
Interest Revenue	1,000
Sales Returns and Allowances	4,500
Sales Revenue	120,000
Cost of Goods Sold	85,000
Sales Discounts	2,000
Administrative Expenses	8,000

Prepare the multi-step income statement for the year ended December 31, 2016.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S5-8 and S5-9. MyAccountingLab

HOW DO WE USE THE GROSS PROFIT PERCENTAGE TO EVALUATE BUSINESS PERFORMANCE?

Merchandisers use several ratios to evaluate their operations, and among them is the gross profit percentage. The **gross profit percentage** measures the profitability of each sales dollar above the cost of goods sold and is computed as follows:

Learning Objective 6

Use the gross profit percentage to evaluate business performance

Gross Profit Percentage

Measures the profitability of each sales dollar above the cost of goods sold. Gross profit / Net sales revenue.

Gross profit percentage = Gross profit / Net sales revenue

The gross profit percentage is one of the most carefully watched measures of profitability. It reflects a business's ability to earn a profit on its merchandise inventory. The gross profit earned on merchandise inventory must be high enough to cover the remaining operating expenses and to earn net income. A small increase in the gross profit percentage from last year to this year may signal an important rise in income. Conversely, a small decrease from last year to this year may signal trouble. Gross profit percentages vary among industries, but in general, a high gross profit percentage is desired.

Returning to **Green Mountain Coffee Roasters, Inc.** we can now calculate the gross profit percentage. Green Mountain had the following total net sales and cost of sales (cost of goods sold), found on the income statement for fiscal year ending September 28, 2013, located in Appendix A.

	For year ended Sep. 28, 2013 (in thousands)	For year ended Sep. 29, 2012 (in thousands)
Net sales	$ 4,358,100	$ 3,859,198
Cost of sales	2,738,714	2,589,799

Gross profit is calculated as total net sales less cost of sales. To determine the gross profit percentage, the gross profit is then divided by total net sales. The gross profit percentage for the year ending September 28, 2013, follows:

Gross profit percentage = ($4,358,100 − $2,738,714) / $4,358,100 = 0.372 = 37.2%

In comparison, the gross profit percentage for the year ending September 29, 2012, was:

Gross profit percentage = ($3,859,198 − $2,589,799) / $3,859,198 = 0.329 = 32.9%

The gross profit percentage increased slightly from 2012 to 2013, signifying that Green Mountain is increasing the percentage of gross profit on its sales. However, when compared with the industry average for gross profit percentage, 58.58%, Green Mountain is significantly lower than average. Green Mountain should consider increasing the amount of profit it is earning on its merchandise inventory.

Try It!

11. Capital City Motorcycle's selected accounts as of December 31, 2016, follow:

Selling Expenses	$ 10,500
Interest Revenue	1,000
Sales Returns and Allowances	4,500
Sales Revenue	120,000
Cost of Goods Sold	85,000
Sales Discounts	2,000
Administrative Expenses	8,000

Determine the gross profit percentage for the year ended December 31, 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S5-10. MyAccountingLab

APPENDIX 5A: Accounting for Merchandise Inventory in a Periodic Inventory System

HOW ARE MERCHANDISE INVENTORY TRANSACTIONS RECORDED IN A PERIODIC INVENTORY SYSTEM?

Learning Objective 7
Account for the purchase and sale of merchandise inventory using a periodic inventory system

Some smaller businesses find it too expensive to invest in a perpetual inventory system. These businesses use a periodic inventory system. In a periodic inventory system, businesses must obtain a physical count of inventory to determine quantities on hand.

Purchases of Merchandise Inventory

All inventory systems use the Merchandise Inventory account. But in a periodic inventory system, purchases, purchase discounts, purchase returns and allowances, and freight in costs are recorded in separate accounts during the year and then the Merchandise Inventory account is updated in the closing process. Let's account for Smart Touch Learning's purchase of the tablet computers from Southwest Electronics Direct as shown in Exhibit 5-3.

The following entries record the receipt of goods on account on June 3 and payment on June 15 (within the discount period) using the periodic inventory system.

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Purchases	35,000	
	Accounts Payable		35,000
	Purchased inventory on account.		
15	Accounts Payable	35,000	
	Cash ($35,000 − $1,050)		33,950
	Purchase Discounts ($35,000 × 0.03)		1,050
	Paid within discount period.		

A = L↑ + E↓
Accounts Payable↑ Purchases↑

A↓ = L↓ + E↑
Cash↓ = Accounts Payable↓ Purchase Discounts↑

When using the periodic inventory system, the Merchandise Inventory account is not updated during the period. Therefore, it will never be used when recording purchases, discounts, returns, or sales of inventory.

Notice that the purchase of merchandise inventory is not recorded directly into the Merchandise Inventory account. Instead, it is recorded in a separate account called Purchases (an expense account). Likewise, when Smart Touch Learning makes payment for the merchandise, the purchase discount is recorded in a separate account called Purchase Discounts (a contra expense account).

Recording Purchase Returns and Allowances

Suppose that, prior to payment, on June 4, Smart Touch Learning returned 20 tablets to the vendor costing $7,000. The company would record this return as follows:

A		L↓	+	E↑
	=	Accounts Payable↓		Purchase Returns and Allowances↑

Date	Accounts and Explanation	Debit	Credit
Jun. 4	Accounts Payable	7,000	
	Purchase Returns and Allowances		7,000
	Returned inventory to seller (vendor).		

In the periodic inventory system, instead of recording the return to Merchandise Inventory, a separate account, Purchase Returns and Allowances, is used. Both Purchase Discounts and Purchase Returns and Allowances are contra expense accounts. They are contra accounts to the Purchases account.

During the period, the business records the cost of all inventory bought in the Purchases account. The balance of Purchases is a *gross* amount because it does not include subtractions for discounts, returns, or allowances. **Net purchases** is the remainder after subtracting the contra accounts from Purchases:

Net Purchases
Purchases less purchase returns and allowances less purchase discounts.

Purchases
− Purchase Returns and Allowances
− Purchase Discounts
= Net Purchases

Recording Transportation Costs

Under the periodic inventory system, freight in is debited to a separate Freight In account (an expense account) as opposed to debiting the Merchandise Inventory account. For example, suppose Smart Touch Learning pays a $60 freight charge on June 3. The company would make the following entry:

A↓		L	+	E↓
Cash↓	=			Freight In↑

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Freight In	60	
	Cash		60
	Paid a freight bill.		

Sale of Merchandise Inventory

Recording sales of merchandise inventory is streamlined in the periodic inventory system. With no running record of merchandise inventory to maintain, there is no need to record an entry to Merchandise Inventory and Cost of Goods Sold. Instead, a sale of inventory involves recording only the Sales Revenue portion. Suppose that on June 19, Smart Touch Learning sold 10 tablets for a total sale of $5,000 on account. The company would record the sale as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 19	Accounts Receivable	5,000	
	Sales Revenue		5,000
	Sale on account.		

A↑	=	L	+	E↑
Accounts Receivable↑				Sales Revenue↑

Accounting for sales discounts and sales returns and allowances is the same as in a perpetual inventory system, except that there are no entries to Merchandise Inventory or Cost of Goods Sold.

Adjusting and Closing Entries

When using the periodic inventory system, there is no need to record an adjusting entry for inventory shrinkage. This is because there is no perpetual running balance of the Merchandise Inventory account. Instead, the business determines the ending Merchandise Inventory amount by taking a physical count of inventory. The amount of this physical count is the amount that is recorded as ending Merchandise Inventory ($31,290 for Smart Touch Learning).

The process of recording the ending Merchandise Inventory is completed through the closing entry process. Let's take a look at Smart Touch Learning's adjusted trial balance and closing entries for the year under the periodic inventory system shown in Exhibit 5A-1 (on the next page). The accounts that are used in the periodic inventory system are highlighted in blue.

Exhibit 5A-1 | **Adjusted Trial Balance and Closing Entries**

SMART TOUCH LEARNING
Adjusted Trial Balance
December 31, 2017

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 8,810	
Accounts Receivable	4,400	
Merchandise Inventory (beginning)	0	
Office Supplies	100	
Prepaid Rent	4,000	
Furniture	18,000	
Accumulated Depreciation—Furniture		$ 2,100
Building	60,000	
Accumulated Depreciation—Building		1,750
Land	20,000	
Accounts Payable		10,800
Utilities Payable		2,500
Salaries Payable		1,500
Interest Payable		300
Unearned Revenue		900
Income Tax Payable		3,780
Notes Payable		60,000
Common Stock		48,000
Retained Earnings		3,550
Dividends	10,000	
Sales Revenue		297,500
Sales Returns and Allowances	11,200	
Sales Discounts	5,600	
Purchases	281,750	
Purchase Returns and Allowances		61,250
Purchase Discounts		4,410
Freight In	14,700	
Salaries Expense	15,000	
Rent Expense	13,000	
Utilities Expense	11,300	
Insurance Expense	6,500	
Depreciation Expense—Furniture	1,800	
Depreciation Expense—Building	1,500	
Advertising Expense	2,400	
Interest Expense	2,300	
Delivery Expense	1,600	
Supplies Expense	600	
Income Tax Expense	3,780	
Total	**$ 498,340**	**$ 498,340**

Temporary accounts that are closed.

Exhibit 5A-1 | **(Continued)**

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Sales Revenue	297,500	
	Purchase Returns and Allowances	61,250	
	Purchase Discounts	4,410	
	Merchandise Inventory (ending)	31,290	
	Income Summary		394,450
	To close revenue and other credit accounts		
	and record ending merchandise inventory.		
31	Income Summary	373,030	
	Sales Returns and Allowances		11,200
	Sales Discounts		5,600
	Purchases		281,750
	Freight In		14,700
	Merchandise Inventory (beginning)		0
	Salaries Expense		15,000
	Rent Expense		13,000
	Utilities Expense		11,300
	Insurance Expense		6,500
	Depreciation Expense—Furniture		1,800
	Depreciation Expense—Building		1,500
	Advertising Expense		2,400
	Interest Expense		2,300
	Delivery Expense		1,600
	Supplies Expense		600
	Income Tax Expense		3,780
	To close expenses and other debit accounts		
	and remove beginning merchandise inventory.		
31	Income Summary	21,420	
	Retained Earnings		21,420
	To close Income Summary.		
31	Retained Earnings	10,000	
	Dividends		10,000
	To close Dividends.		

A↑		**L**	+	**E↑**
Merchandise Inventory↑	=			Sales Revenue↓ Purchase Returns and Allowances↓ Purchase Discounts↓ Income Summary↑

A↓		**L**	+	**E↓**
Merchandise Inventory↓	=			Income Summary↓ Sales Returns and Allowances↓ Sales Discounts↓ Expenses↓

A		**L**	+	**E↑↓**
	=			Income Summary↓ Retained Earnings↑

A		**L**	+	**E↑↓**
	=			Retained Earnings↓ Dividends↓

Income Summary

Clos. 2	373,030	394,450	Clos. 1
		21,420	Bal.
Clos. 3	21,420		
		0	**Bal.**

Retained Earnings

		3,550	Adj. Bal.
Clos. 4	10,000	21,420	Clos. 3
		14,970	**Bal.**

Dividends

Adj. Bal.	10,000		
		10,000	Clos. 4
Bal.	**0**		

The four-step closing process under the periodic inventory system is similar to the perpetual inventory system, but let's take a moment to highlight the differences:

Step 1: Using the periodic inventory system, Sales Revenue is still closed with a debit via the Income Summary account, but in addition, all other temporary accounts with credit balances (Purchase Returns and Allowances and Purchase Discounts) are also closed. The ending Merchandise Inventory (determined from the physical count) is recorded as a debit.

Step 2: Expense accounts and other temporary accounts with debit balances are still closed via the Income Summary account. In addition, the beginning Merchandise Inventory, Purchases, and Freight In are also closed via the Income Summary account. Notice in the Merchandise Inventory T-account shown below that the ending inventory is recorded with a debit entry and the beginning inventory is removed with a credit entry during the closing process.

Merchandise Inventory

Adj. Bal.	0		
Clos. 1	31,290	0	Clos. 2
Bal.	**31,290**		

The key difference in the closing process under the periodic inventory system is how merchandise inventory is handled. In the periodic inventory system, the ending merchandise inventory balance must be recorded as a debit during closing and the beginning merchandise inventory balance must be recorded as a credit during closing. The additional Purchases and related contra and adjunct accounts must also be closed.

Step 3 and Step 4: These steps, closing the Income Summary and Dividends accounts, are the same under both methods.

Preparing Financial Statements

The financial statements under the perpetual and periodic inventory systems are similar. However, the periodic inventory system requires an additional calculation—the cost of goods sold. As we have seen under the perpetual inventory system, cost of goods sold is simply the sum of the amounts posted to that account. Cost of goods sold must be computed separately under the periodic inventory system. At the end of each period, the company combines a number of accounts to compute cost of goods sold for the period, and this calculation is shown on the income statement. Cost of goods sold is calculated as follows for Smart Touch Learning:

Beginning Merchandise Inventory		$ 0
Purchases	$ 281,750	
Less: Purchase Returns and Allowances	61,250	
Purchase Discounts	4,410	
Net Purchases	216,090	
Plus: Freight In	14,700	
Net Cost of Purchases		230,790
Cost of Goods Available for Sale		230,790
Less: Ending Inventory		31,290
Cost of Goods Sold		$ 199,500

The multi-step income statement for Smart Touch Learning is presented in Exhibit 5A-2. Notice that the net income is the same under both methods.

Exhibit 5A-2 **Multi-Step Income Statement**

SMART TOUCH LEARNING
Income Statement
Year Ended December 31, 2017

Sales Revenue		$ 297,500	
Less: Sales Returns and Allowances		11,200	
Sales Discounts		5,600	
Net Sales Revenue			$ 280,700
Cost of Goods Sold:			
Beginning Merchandise Inventory		0	
Purchases	$ 281,750		
Less: Purchase Returns and Allowances	61,250		
Purchase Discounts	4,410		
Net Purchases	216,090		
Plus: Freight In	14,700		
Net Cost of Purchases		230,790	
Cost of Goods Available for Sale		230,790	
Less: Ending Merchandise Inventory		31,290	
Cost of Goods Sold			199,500
Gross Profit			81,200
Operating Expenses:			
Selling Expenses:			
Salaries Expense		8,100	
Rent Expense		7,300	
Advertising Expense		2,400	
Depreciation Expense		2,200	
Delivery Expense		1,600	
Total Selling Expenses		21,600	
Administrative Expenses:			
Utilities Expense		11,300	
Salaries Expense		6,900	
Insurance Expense		6,500	
Rent Expense		5,700	
Depreciation Expense		1,100	
Supplies Expense		600	
Total Administrative Expenses		32,100	
Total Operating Expenses			53,700
Operating Income			27,500
Other Revenues and (Expenses):			
Interest Expense		(2,300)	
Total Other Revenues and (Expenses)			(2,300)
Income Before Income Tax Expense			$ 25,200
Income Tax Expense			3,780
Net Income			**$ 21,420**

Gross Profit

Operating Income

Other Revenues and (Expenses) and Income Before Income Tax Expense

Income Tax Expense and Net Income

Exhibit 5A-3 provides a side-by-side comparison of periodic and perpetual inventory system journal entries for the same company's transactions.

Exhibit 5A-3 | **Perpetual Versus Periodic Inventory System**

PERPETUAL INVENTORY SYSTEM

PERIODIC INVENTORY SYSTEM

Purchased inventory on account:

Date	Accounts and Explanation	Debit	Credit
	Merchandise Inventory	5,250	
	Accounts Payable		5,250
	Purchased inventory on account.		

Date	Accounts and Explanation	Debit	Credit
	Purchases	5,250	
	Accounts Payable		5,250
	Purchased inventory on account.		

Returned inventory to seller (vendor):

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	1,750	
	Merchandise Inventory		1,750
	Returned inventory to seller (vendor).		

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	1,750	
	Purchase Returns and Allowances		1,750
	Returned inventory to seller (vendor).		

Paid a freight bill on a purchase:

Date	Accounts and Explanation	Debit	Credit
	Merchandise Inventory	60	
	Cash		60
	Paid a freight bill.		

Date	Accounts and Explanation	Debit	Credit
	Freight In	60	
	Cash		60
	Paid a freight bill.		

Paid merchandise invoice within discount period:

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	3,500	
	Cash		3,395
	Merchandise Inventory		105
	Paid within discount period.		

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	3,500	
	Cash		3,395
	Purchase Discounts		105
	Paid within discount period.		

Paid merchandise invoice after discount period:

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	3,500	
	Cash		3,500
	Paid after discount period.		

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	3,500	
	Cash		3,500
	Paid after discount period.		

Sale on account:

Date	Accounts and Explanation	Debit	Credit
	Accounts Receivable	5,000	
	Sales Revenue		5,000
	Sale on account.		
	Cost of Goods Sold	3,500	
	Merchandise Inventory		3,500
	Recorded the cost of goods sold.		

Date	Accounts and Explanation	Debit	Credit
	Accounts Receivable	5,000	
	Sales Revenue		5,000
	Sale on account.		

Exhibit 5A-3 | **(Continued)**

PERPETUAL INVENTORY SYSTEM

PERIODIC INVENTORY SYSTEM

Paid a freight bill on a sale:

Date	Accounts and Explanation	Debit	Credit
	Delivery Expense	30	
	Cash		30
	Paid a freight bill.		

Date	Accounts and Explanation	Debit	Credit
	Delivery Expense	30	
	Cash		30
	Paid a freight bill.		

Received returned goods:

Date	Accounts and Explanation	Debit	Credit
	Sales Returns and Allowances	1,500	
	Accounts Receivable		1,500
	Received returned goods.		
	Merchandise Inventory	1,050	
	Cost of Goods Sold		1,050
	Placed goods back in inventory.		

Date	Accounts and Explanation	Debit	Credit
	Sales Returns and Allowances	1,500	
	Accounts Receivable		1,500
	Received returned goods.		

Granted a sales allowance:

Date	Accounts and Explanation	Debit	Credit
	Sales Returns and Allowances	100	
	Accounts Receivable		100
	Granted a sales allowance for damaged goods.		

Date	Accounts and Explanation	Debit	Credit
	Sales Returns and Allowances	100	
	Accounts Receivable		100
	Granted a sales allowance for damaged goods.		

Collected cash within the discount period:

Date	Accounts and Explanation	Debit	Credit
	Cash	3,332	
	Sales Discounts	68	
	Accounts Receivable		3,400
	Cash collection within the discount period.		

Date	Accounts and Explanation	Debit	Credit
	Cash	3,332	
	Sales Discounts	68	
	Accounts Receivable		3,400
	Cash collection within the discount period.		

Collected cash after the discount period:

Date	Accounts and Explanation	Debit	Credit
	Cash	3,400	
	Accounts Receivable		3,400
	Cash collection after the discount period.		

Date	Accounts and Explanation	Debit	Credit
	Cash	3,400	
	Accounts Receivable		3,400
	Cash collection after the discount period.		

Adjusted for inventory shrinkage:

Date	Accounts and Explanation	Debit	Credit
	Cost of Goods Sold	240	
	Merchandise Inventory		240
	Adjustment for inventory shrinkage.		

Exhibit 5A-3 | **(Continued)**

PERPETUAL INVENTORY SYSTEM

Closing entries:

Date	Accounts and Explanation	Debit	Credit
	Sales Revenue	297,500	
	Income Summary		297,500
	To close revenue account.		
	Income Summary	276,080	
	Sales Returns and Allowances		11,200
	Sales Discounts		5,600
	Cost of Goods Sold		199,500
	Salaries Expense		15,000
	Rent Expense		13,000
	Utilities Expense		11,300
	Insurance Expense		6,500
	Depreciation Expense—Furniture		1,800
	Depreciation Expense—Building		1,500
	Advertising Expense		2,400
	Interest Expense		2,300
	Delivery Expense		1,600
	Supplies Expense		600
	Income Tax Expense		3,780
	To close expenses and other debit accounts.		
	Income Summary	21,420	
	Retained Earnings		21,420
	To close Income Summary.		
	Retained Earnings	10,000	
	Dividends		10,000
	To close Dividends.		

PERIODIC INVENTORY SYSTEM

Date	Accounts and Explanation	Debit	Credit
	Sales Revenue	297,500	
	Purchase Returns and Allowances	61,250	
	Purchase Discounts	4,410	
	Merchandise Inventory (ending)	31,290	
	Income Summary		394,450
	To close revenue and other credit accounts and record ending merchandise inventory.		
	Income Summary	373,030	
	Sales Returns and Allowances		11,200
	Sales Discounts		5,600
	Purchases		281,750
	Freight In		14,700
	Merchandise Inventory (beginning)		0
	Salaries Expense		15,000
	Rent Expense		13,000
	Utilities Expense		11,300
	Insurance Expense		6,500
	Depreciation Expense—Furniture		1,800
	Depreciation Expense—Building		1,500
	Advertising Expense		2,400
	Interest Expense		2,300
	Delivery Expense		1,600
	Supplies Expense		600
	Income Tax Expense		3,780
	To close expenses and other debit accounts and remove beginning merchandise inventory.		
	Income Summary	21,420	
	Retained Earnings		21,420
	To close Income Summary.		
	Retained Earnings	10,000	
	Dividends		10,000
	To close Dividends.		

Try It!

12A. Click Computers has the following transactions in July related to purchase and sale of merchandise inventory.

July 1	Purchase of $20,500 worth of computers on account, terms of 2/10, n/30.
3	Return of $4,000 of the computers to the vendor.
9	Payment made on account.
12	Sold computers on account for $8,000 to a customer, terms 3/15, n/30.
21	Accepted a $1,000 return from a customer.
26	Received payment from customer on balance due.

Journalize the transactions for Click Computers assuming that the company uses the periodic inventory system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S5A-11, S5A-12, S5A-13, and S5A-14. MyAccountingLab

REVIEW

> Things You Should Know

1. What are merchandising operations?

- A merchandiser is a business that sells merchandise, or goods, to customers.
- There are two main types of inventory accounting systems that are used by merchandisers:
  - Periodic inventory system—requires businesses to obtain a physical count of inventory to determine quantities on hand
  - Perpetual inventory system—keeps a running computerized record of merchandise inventory

2. How are purchases of merchandise inventory recorded in a perpetual inventory system?

- Purchase of merchandise inventory

Date	Accounts and Explanation	Debit	Credit
	Merchandise Inventory	XXX	
	Cash or Accounts Payable		XXX

- Purchase return

Date	Accounts and Explanation	Debit	Credit
	Cash or Accounts Payable	XXX	
	Merchandise Inventory		XXX

- Payment of freight in

Date	Accounts and Explanation	Debit	Credit
	Merchandise Inventory	XXX	
	Cash		XXX

- Payment within discount period

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	XXX	
	Cash		XXX
	Merchandise Inventory		XXX

- Payment after discount period

Date	Accounts and Explanation	Debit	Credit
	Accounts Payable	XXX	
	Cash		XXX

3. How are sales of merchandise inventory recorded in a perpetual inventory system?

- Sale of merchandise inventory

Date	Accounts and Explanation	Debit	Credit
	Cash or Accounts Receivable	XXX	
	Sales Revenue		XXX
	Cost of Goods Sold	XXX	
	Merchandise Inventory		XXX

- Sales return

Date	Accounts and Explanation	Debit	Credit
	Sales Returns and Allowances	XXX	
	Cash or Accounts Receivable		XXX
	Merchandise Inventory	XXX	
	Cost of Goods Sold		XXX

- Sales allowance

Date	Accounts and Explanation	Debit	Credit
	Sales Returns and Allowances	XXX	
	Cash or Accounts Receivable		XXX

- Payment of freight out

Date	Accounts and Explanation	Debit	Credit
	Delivery Expense	XXX	
	Cash		XXX

- Collection of cash during discount period

Date	Accounts and Explanation	Debit	Credit
	Cash	XXX	
	Sales Discounts	XXX	
	Accounts Receivable		XXX

- Collection of cash after discount period

Date	Accounts and Explanation	Debit	Credit
	Cash	XXX	
	Accounts Receivable		XXX

4. What are the adjusting and closing entries for a merchandiser?

- An adjusting entry must be made for inventory shrinkage, the loss of inventory that occurs because of theft, damage, and errors.
- The closing entries are similar to those already learned, except for including the new accounts (Sales Revenue, Sales Returns and Allowances, Sales Discounts, Delivery Expense, and Cost of Goods Sold).

5. How are a merchandiser's financial statements prepared?

- There are two formats for the income statement:
  - Single-step income statement—groups all revenues together and all expenses together without calculating other subtotals
  - Multi-step income statement—lists several important subtotals including gross profit, operating income, and income before income tax expense
- A merchandiser's statement of retained earnings looks exactly like that of a service business.
- The balance sheet will also look the same, except merchandisers have an additional current asset, Merchandise Inventory.

6. How do we use the gross profit percentage to evaluate business performance?

- The gross profit percentage measures the profitability of each sales dollar above the cost of goods sold.
- Gross profit percentage = Gross profit / Net sales revenue.

7. How are merchandise inventory transactions recorded in a periodic inventory system? (Appendix 5A)

- The Merchandise Inventory account is not used when recording purchase transactions. Instead Purchases, Purchase Discounts, Purchase Returns and Allowances, and Freight In are used.
- Sales transactions only involve recording the Sales Revenue. The Merchandise Inventory account is not used.
- An adjustment for inventory shrinkage is not needed.
- Closing entries are similar to the perpetual inventory system with the addition of closing the new accounts discussed. Ending Merchandise Inventory must be recorded, and beginning Merchandise Inventory must be removed.

> Summary Problem 5-1

Suppose Heat Miser Air Conditioner Company engaged in the following transactions during June of the current year:

Jun. 3	Purchased inventory on account with credit terms of 1/10, n/EOM, $1,600.
9	Returned 40% of the inventory purchased on June 3. It was defective.
12	Sold goods for cash, $920 (cost, $550).
15	Purchased goods for $5,000 on account. Credit terms were 3/15, n/30.
16	Paid a $260 freight bill on goods purchased.
18	Sold inventory for $2,000 on account with credit terms of 2/10, n/30 (cost, $1,180).
22	Received returned goods from the customer of the June 18 sale, $800 (cost, $480).
24	Paid supplier for goods purchased on June 15.
28	Received cash in full settlement of the account from the customer who purchased inventory on June 18.
29	Paid the amount owed on account from the purchase of June 3.

Requirements

1. Journalize the preceding transactions. Assume Heat Miser uses a perpetual inventory system.
2. Set up T-accounts, and post the journal entries to show the ending balances in the Merchandise Inventory and the Cost of Goods Sold accounts only.

> Solution

Requirement 1

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Merchandise Inventory	1,600	
	Accounts Payable		1,600
	Purchased inventory on account.		
9	Accounts Payable ($1,600 × 0.40)	640	
	Merchandise Inventory		640
	Returned inventory to seller (vendor).		
12	Cash	920	
	Sales Revenue		920
	Cash sale.		
12	Cost of Goods Sold	550	
	Merchandise Inventory		550
	Recorded the cost of goods sold.		
15	Merchandise Inventory	5,000	
	Accounts Payable		5,000
	Purchased inventory on account.		
16	Merchandise Inventory	260	
	Cash		260
	Paid a freight bill.		

Date	Accounts and Explanation	Debit	Credit
Jun. 18	Accounts Receivable	2,000	
	Sales Revenue		2,000
	Sale on account.		
18	Cost of Goods Sold	1,180	
	Merchandise Inventory		1,180
	Recorded the cost of goods sold.		
22	Sales Returns and Allowances	800	
	Accounts Receivable		800
	Received returned goods.		
22	Merchandise Inventory	480	
	Cost of Goods Sold		480
	Placed goods back in inventory.		
24	Accounts Payable	5,000	
	Cash ($5,000 − $150)		4,850
	Merchandise Inventory ($5,000 × 0.03)		150
	Paid within discount period.		
28	Cash ($1,200 − $24)	1,176	
	Sales Discounts ($1,200 × 0.02)	24	
	Accounts Receivable ($2,000 − $800)		1,200
	Cash collection within discount period net of return.		
29	Accounts Payable ($1,600 − $640)	960	
	Cash		960
	Paid after discount period net of return.		

Requirement 2

Merchandise Inventory

Jun. 3	1,600	640	Jun. 9
Jun. 15	5,000	550	Jun. 12
Jun. 16	260	1,180	Jun. 18
Jun. 22	480	150	Jun. 24
Bal.	**4,820**		

Cost of Goods Sold

Jun. 12	550	480	Jun. 22
Jun. 18	1,180		
Bal.	**1,250**		

> Summary Problem 5-2

King Cornelius Company uses a perpetual inventory system. The adjusted trial balance of King Cornelius Company follows:

KING CORNELIUS COMPANY
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 5,600	
Accounts Receivable	37,100	
Merchandise Inventory	25,800	
Office Supplies	1,300	
Prepaid Rent	1,000	
Furniture	26,500	
Accumulated Depreciation—Furniture		$ 23,800
Accounts Payable		6,300
Salaries Payable		2,000
Interest Payable		600
Unearned Revenue		2,400
Notes Payable, long-term		35,000
Common Stock		20,000
Retained Earnings		2,200
Dividends	48,000	
Sales Revenue		244,000
Sales Returns and Allowances	10,000	
Sales Discounts	8,000	
Interest Revenue		2,000
Cost of Goods Sold	81,000	
Salaries Expense	72,700	
Rent Expense	7,700	
Utilities Expense	5,800	
Depreciation Expense—Furniture	2,700	
Supplies Expense	2,200	
Interest Expense	2,900	
Total	**$ 338,300**	**$ 338,300**

Requirements

1. Journalize the closing entries at December 31. Post to the Income Summary account as an accuracy check on net income. Recall that the credit balance closed out of Income Summary should equal net income as computed on the income statement. Also post to Retained Earnings, whose balance should agree with the amount reported on the balance sheet.
2. Prepare the company's multi-step income statement, statement of retained earnings, and balance sheet in report form for year ended December 31, 2016. Note: King Cornelius doesn't separate its operating expenses as either selling or administrative.
3. Compute the gross profit percentage for 2016.

Requirement 1

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Sales Revenue	244,000	
	Interest Revenue	2,000	
	Income Summary		246,000
	To close revenue accounts.		
31	Income Summary	193,000	
	Sales Returns and Allowances		10,000
	Sales Discounts		8,000
	Cost of Goods Sold		81,000
	Salaries Expense		72,700
	Rent Expense		7,700
	Utilities Expense		5,800
	Depreciation Expense—Furniture		2,700
	Supplies Expense		2,200
	Interest Expense		2,900
	To close expenses and other debit accounts.		
31	Income Summary	53,000	
	Retained Earnings		53,000
	To close Income Summary.		
31	Retained Earnings	48,000	
	Dividends		48,000
	To close Dividends.		

Income Summary

Clos. 2	193,000	246,000	Clos. 1
		53,000	Bal.
Clos. 3	53,000		
		0	**Bal.**

Retained Earnings

		2,200	Adj. Bal.
Clos. 4	48,000	53,000	Clos. 3
		7,200	**Bal.**

Dividends

Adj. Bal.	48,000		
		48,000	Clos. 4
Bal.	**0**		

Requirement 2

KING CORNELIUS COMPANY
Income Statement
Year Ended December 31, 2016

Sales Revenue	$ 244,000	
Less: Sales Discounts	8,000	
Sales Returns and Allowances	10,000	
Net Sales Revenue		$ 226,000
Cost of Goods Sold		81,000
Gross Profit		145,000
Operating Expenses:		
Salaries Expense	72,700	
Rent Expense	7,700	
Utilities Expense	5,800	
Depreciation Expense—Furniture	2,700	
Supplies Expense	2,200	
Total Operating Expenses		91,100
Operating Income		53,900
Other Revenues and (Expenses):		
Interest Revenue	2,000	
Interest Expense	(2,900)	
Total Other Revenues and (Expenses)		(900)
Net Income		**$ 53,000**

KING CORNELIUS COMPANY
Statement of Retained Earnings
Year Ended December 31, 2016

Retained Earnings, January 1, 2016	$ 2,200
Net income for the year	53,000
	55,200
Dividends	(48,000)
Retained Earnings, December 31, 2016	**$ 7,200**

KING CORNELIUS COMPANY
Balance Sheet
December 31, 2016

Assets		
Current Assets:		
Cash	$ 5,600	
Accounts Receivable	37,100	
Merchandise Inventory	25,800	
Office Supplies	1,300	
Prepaid Rent	1,000	
Total Current Assets		$ 70,800
Plant Assets:		
Furniture	26,500	
Less: Accumulated Depreciation—Furniture	(23,800)	
Total Plant Assets		2,700
Total Assets		**$ 73,500**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 6,300	
Salaries Payable	2,000	
Interest Payable	600	
Unearned Revenue	2,400	
Total Current Liabilities		$ 11,300
Long-term Liabilities:		
Notes Payable		35,000
Total Liabilities		46,300
Stockholders' Equity		
Common Stock		20,000
Retained Earnings		7,200
Total Stockholders' Equity		27,200
Total Liabilities and Stockholders' Equity		**$ 73,500**

Requirement 3

Gross profit percentage = Gross profit / Net sales revenue = $145,000 / $226,000 = 0.642 = 64.2%

> Key Terms

Administrative Expenses (p. 291)
Cost of Goods Sold (COGS) (p. 272)
Credit Terms (p. 276)
FOB Destination (p. 279)
FOB Shipping Point (p. 279)
Freight In (p. 279)
Freight Out (p. 279)
Gross Profit (p. 273)
Gross Profit Percentage (p. 293)
Income Tax Expense (p. 292)
Inventory Shrinkage (p. 287)
Invoice (p. 274)
Merchandise Inventory (p. 271)
Merchandiser (p. 271)
Multi-Step Income Statement (p. 291)
Net Purchases (p. 296) (Appendix 5A)
Net Sales Revenue (p. 285)
Operating Expenses (p. 273)
Operating Income (p. 291)
Other Revenues and Expenses (p. 292)
Periodic Inventory System (p. 273)
Perpetual Inventory System (p. 273)
Purchase Allowance (p. 277)
Purchase Discount (p. 276)
Purchase Return (p. 277)
Retailer (p. 271)
Sales Discounts (p. 283)
Sales Returns and Allowances (p. 283)
Sales Revenue (p. 282)
Selling Expenses (p. 291)
Single-Step Income Statement (p. 290)
Vendor (p. 272)
Wholesaler (p. 271)

> Quick Check

Learning Objective 1

1. Which account does a merchandiser use that a service company does not use?

a. Cost of Goods Sold
b. Merchandise Inventory
c. Sales Revenue
d. All of the above

Learning Objective 1

2. The two main inventory accounting systems are the

a. perpetual and periodic.
b. purchase and sale.
c. returns and allowances.
d. cash and accrual.

Learning Objective 2

3. The journal entry for the purchase of inventory on account *using the perpetual inventory system* is

Date	Accounts and Explanation	Debit	Credit
a.	Merchandise Inventory	XXX	
	Accounts Receivable		XXX
b.	Accounts Payable	XXX	
	Merchandise Inventory		XXX
c.	Merchandise Inventory	XXX	
	Accounts Payable		XXX
d.	Merchandise Inventory	XXX	
	Cash		XXX

Learning Objective 2

4. JC Manufacturing purchased inventory for $5,300 and also paid a $260 freight bill. JC Manufacturing returned 45% of the goods to the seller and later took a 2% purchase discount. Assume JC Manufacturing uses a perpetual inventory system. What is JC Manufacturing's final cost of the inventory that it kept? (Round your answer to the nearest whole number.)

a. $2,997
b. $2,337
c. $3,117
d. $2,857

Learning Objective 3

5. Suppose Austin Sound had sales of $300,000 and sales returns of $45,000. Cost of goods sold was $152,000. How much gross profit did Austin Sound report?

a. $148,000 **b.** $103,000 **c.** $255,000 **d.** $88,000

Learning Objective 4

6. Suppose Dave's Discount's Merchandise Inventory account showed a balance of $8,000 before the year-end adjustments. The physical count of goods on hand totaled $7,400. Dave uses a perpetual inventory system. To adjust the accounts, which entry would the company make?

Date	Accounts and Explanation	Debit	Credit
a.	Cost of Goods Sold	600	
	Merchandise Inventory		600
b.	Merchandise Inventory	600	
	Accounts Receivable		600
c.	Accounts Payable	600	
	Merchandise Inventory		600
d.	Merchandise Inventory	600	
	Cost of Goods Sold		600

Learning Objective 4

7. Which of the following accounts would be closed at the end of the year *using the perpetual inventory system*?

a. Cost of Goods Sold
b. Merchandise Inventory
c. Accounts Receivable
d. Accounts Payable

Learning Objective 5

8. What is the order of the subtotals that appear on a multi-step income statement?

a. Gross Profit, Operating Income, Net Income, Total Other Revenues and Expenses
b. Operating Income, Gross Profit, Net Income, Total Other Revenues and Expenses
c. Total Other Revenues and Expenses, Operating Income, Gross Profit, Net Income
d. Gross Profit, Operating Income, Total Other Revenues and Expenses, Net Income

Learning Objective 6

9. Assume Juniper Natural Dyes made Net Sales Revenue of $90,000 and Cost of Goods Sold totaled $58,000. What was Juniper Natural Dyes's gross profit percentage for this period? (Round your answer to the nearest whole percent.)

a. 36% **b.** 3.4 times **c.** 64% **d.** 17%

Learning Objective 7
Appendix 5A

10A. The journal entry for the purchase of inventory on account *using the periodic inventory system* is

Date	Accounts and Explanation	Debit	Credit
a.	Purchases	XXX	
	Accounts Receivable		XXX
b.	Accounts Payable	XXX	
	Merchandise Inventory		XXX
c.	Merchandise Inventory	XXX	
	Accounts Payable		XXX
d.	Purchases	XXX	
	Accounts Payable		XXX

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is a merchandiser, and what is the name of the merchandise that it sells?
2. What are the two types of merchandisers? How do they differ?
3. Describe the operating cycle of a merchandiser.
4. What is Cost of Goods Sold (COGS), and where is it reported?
5. How is gross profit calculated, and what does it represent?
6. What are the two types of inventory accounting systems? Briefly describe each.
7. What is an invoice?
8. What account is debited when recording a purchase of inventory when using the perpetual inventory system?
9. What would the credit terms of "2/10, n/EOM" mean?
10. What is a purchase return? How does a purchase allowance differ from a purchase return?
11. Describe FOB shipping point and FOB destination. When does the buyer take ownership of the goods, and who typically pays the freight?
12. How is the net cost of inventory calculated?
13. What are the two journal entries involved when recording the sale of inventory when using the perpetual inventory system?
14. When granting a sales allowance, is there a return of merchandise inventory from the customer? Describe the journal entry(ies) that would be recorded.
15. What is freight out, and how is it recorded by the seller?
16. How is net sales revenue calculated?
17. What is inventory shrinkage? Describe the adjusting entry that would be recorded to account for inventory shrinkage.
18. What are the four steps involved in the closing process for a merchandising company?
19. Describe the single-step income statement.
20. Describe the multi-step income statement.
21. What financial statement is merchandise inventory reported on, and in what section?
22. What does the gross profit percentage measure, and how is it calculated?

23A. What account is debited when recording a purchase of inventory when using a periodic inventory system?

24A. When recording purchase returns and purchase allowances under the periodic inventory system, what account is used?

25A. What account is debited when recording the payment of freight in when using the periodic inventory system?

26A. Describe the journal entry(ies) when recording a sale of inventory using the periodic inventory system.

27A. Is an adjusting entry needed for inventory shrinkage when using the periodic inventory system? Explain.

28A. Highlight the differences in the closing process when using the periodic inventory system rather than the perpetual inventory system.

29A. Describe the calculation of cost of goods sold when using the periodic inventory system.

> Short Exercises

For all short exercises, assume the perpetual inventory system is used unless stated otherwise. Round all numbers to the nearest whole dollar unless stated otherwise.

S5-1 Comparing periodic and perpetual inventory systems

Learning Objective 1

For each statement below, identify whether the statement applies to the periodic inventory system or perpetual inventory system.

a. Normally used for relatively inexpensive goods.

b. Keeps a running computerized record of merchandise inventory.

c. Achieves better control over merchandise inventory.

d. Requires a physical count of inventory to determine the quantities on hand.

e. Uses bar codes to keep up-to-the-minute records of inventory.

S5-2 Journalizing purchase transactions

Learning Objective 2

Consider the following transactions for Lil Squirt Toys:

Sept. 6	Lil Squirt Toys buys $152,300 worth of MegoBlock toys on account with credit terms of 2/10, n/60.
11	Lil Squirt Toys returns $15,150 of the merchandise to MegoBlock due to damage during shipment.
15	Lil Squirt Toys paid the amount due, less the return and discount.

Requirements

1. Journalize the purchase transactions. Explanations are not required.
2. In the final analysis, how much did the inventory cost Lil Squirt Toys?

S5-3 Journalizing purchase transactions

Learning Objective 2

Consider the following transactions for Derry Drug Store:

Apr. 2	Derry buys $23,000 worth of inventory on account with credit terms of 1/15, n/45, FOB shipping point.
4	Derry pays a $110 freight charge.
8	Derry returns $6,400 of the merchandise due to damage during shipment.
14	Derry paid the amount due, less return and discount.

Requirements

1. Journalize the purchase transactions. Explanations are not required.
2. In the final analysis, how much did the inventory cost Derry?

Learning Objective 3

S5-4 Journalizing sales transactions

Journalize the following sales transactions for Frank Sportswear. Explanations are not required.

Apr. 1	Frank sold $71,000 of women's sportswear on account, credit terms of 1/10, n/60. Cost of goods is $41,000.
5	Frank received a $3,500 sales return on damaged goods from the customer. Cost of goods damaged is $1,750.
10	Frank receives payment from the customer on the amount due, less the return and discount.

Learning Objectives 2, 3

S5-5 Journalizing purchase and sales transactions

Suppose Enviro.com sells 3,000 books on account for $17 each (cost of these books is $30,600), credit terms 2/20, n/45 on October 10, 2016, to ABC Store. One hundred of these books (cost $1,020) were damaged in shipment, so Enviro.com later received the damaged goods from ABC Store as sales returns on October 13, 2016. ABC Store paid the balance to Enviro.com on October 22, 2016.

Requirements

1. Journalize ABC Store's October 2016 transactions
2. Journalize Enviro.com's October 2016 transactions.

Learning Objective 4

S5-6 Adjusting for inventory shrinkage

Beth's Furniture's unadjusted Merchandise Inventory account at year-end is $63,000. The physical count of inventory came up with a total of $61,900. Journalize the adjusting entry needed to account for inventory shrinkage.

Learning Objective 4

S5-7 Journalizing closing entries

Rodney RV Center's accounting records include the following accounts at December 31, 2016.

Cost of Goods Sold	$ 368,000	Accumulated Depreciation—Building	$ 38,000
Accounts Payable	20,000	Cash	52,000
Rent Expense	23,000	Sales Revenue	680,000
Building	115,000	Depreciation Expense—Building	14,000
Common Stock	132,000	Dividends	53,000
Retained Earnings	46,400	Sales Discounts	4,000
Merchandise Inventory	238,400	Interest Revenue	2,000
Sales Returns and Allowances	40,000		
Notes Receivable	37,000		

Requirements

1. Journalize the required closing entries for Rodney.
2. Determine the ending balance in the Retained Earnings account.

Use the following information to answer Short Exercises S5-8 and S5-9.

Carissa Communications reported the following figures from its adjusted trial balance for its first year of business, which ended on July 31, 2016:

Cash	$ 4,100	Cost of Goods Sold	$ 18,800
Selling Expenses	1,300	Equipment, net	8,500
Accounts Payable	4,900	Accrued Liabilities	2,000
Common Stock	2,820	Sales Revenue	42,000
Notes Payable, long-term	400	Accounts Receivable	3,400
Merchandise Inventory	1,200	Interest Expense	20
Administrative Expenses	3,100	Sales Discounts	4,300
Sales Returns and Allowances	7,400		

S5-8 Preparing a merchandiser's income statement

Learning Objective 5

Prepare Carissa Communications's multi-step income statement for the year ended July 31, 2016.

S5-9 Preparing a merchandiser's statement of retained earnings and balance sheet

Learning Objective 5

Requirements

1. Prepare Carissa Communications's statement of retained earnings for the year ended July 31, 2016. Assume that there were no dividends declared during the year and that the business began on August 1, 2015.
2. Prepare Carissa Communications's classified balance sheet at July 31, 2016. Use the report format.

S5-10 Computing the gross profit percentage

Learning Objective 6

Madlock Landscape Supply's selected accounts as of December 31, 2016 follow.

Selling Expenses	$ 12,900
Interest Revenue	900
Sales Returns and Allowances	5,300
Sales Revenue	136,000
Cost of Goods Sold	119,000
Sales Discounts	1,800
Administrative Expenses	9,600

Compute the gross profit percentage for 2016.

Learning Objective 7
Appendix 5A

S5A-11 Journalizing purchase transactions—periodic inventory system

Consider the following transactions for Garnier Packing Supplies:

Apr. 10	Garnier Packing Supplies buys $156,000 worth of merchandise inventory on account with credit terms of 3/10, n/30.
12	Garnier returns $11,000 of the merchandise to the vendor due to damage during shipment.
19	Garnier paid the amount due, less the return and discount.

Requirements

1. Journalize the purchase transactions assuming Garnier Packing Supplies uses the periodic inventory system. Explanations are not required.
2. What is the amount of net purchases?

Learning Objective 7
Appendix 5A

S5A-12 Journalizing sales transactions—periodic inventory system

Journalize the following sales transactions for Sandman Camera Store using the periodic inventory system. Explanations are not required.

Dec. 3	Sandman sold $44,800 of camera equipment on account, credit terms are 3/15, n/EOM.
5	Sandman received a $900 sales return on damaged goods from the customer.
17	Sandman receives payment from the customer on the amount due, less the return and discount.

Learning Objective 7
Appendix 5A

S5A-13 Journalizing closing entries—periodic inventory system

D & L Printing Supplies's accounting records include the following accounts at December 31, 2016.

Purchases	$ 189,600	Accumulated Depreciation—Building	$ 23,000
Accounts Payable	7,900	Cash	17,900
Rent Expense	9,000	Sales Revenue	295,100
Building	47,900	Depreciation Expense—Building	3,600
Common Stock	58,000	Dividends	27,100
Retained Earnings	21,800	Sales Discounts	4,300
Merchandise Inventory, Beginning	122,000	Interest Expense	2,200
Sales Returns and Allowances	17,500	Merchandise Inventory, Ending	99,500
Notes Payable	11,500	Purchase Returns and Allowances	21,200
Purchase Discounts	2,600		

Requirements

1. Journalize the required closing entries for D & L Printing Supplies assuming that D & L uses the periodic inventory system.
2. Determine the ending balance in the Retained Earnings account.

Learning Objective 7
Appendix 5A

S5A-14 Computing cost of goods sold in a periodic inventory system

X Wholesale Company began the year with merchandise inventory of $11,000. During the year, X purchased $93,000 of goods and returned $6,700 due to damage. X also paid freight charges of $1,200 on inventory purchases. At year-end, X's ending merchandise inventory balance stood at $17,300. Assume that X uses the periodic inventory system. Compute X's cost of goods sold for the year.

> Exercises

For all exercises, assume the perpetual inventory system is used unless stated otherwise. Round all numbers to the nearest whole dollar unless stated otherwise.

Learning Objectives 1, 2, 3

E5-15 Using accounting vocabulary

Match the accounting terms with the corresponding definitions.

1. Credit Terms
2. FOB Destination
3. Invoice
4. Cost of Goods Sold
5. Net Sales Revenue
6. Purchase Allowance
7. FOB Shipping Point
8. Wholesaler
9. Purchase Discount
10. Retailer

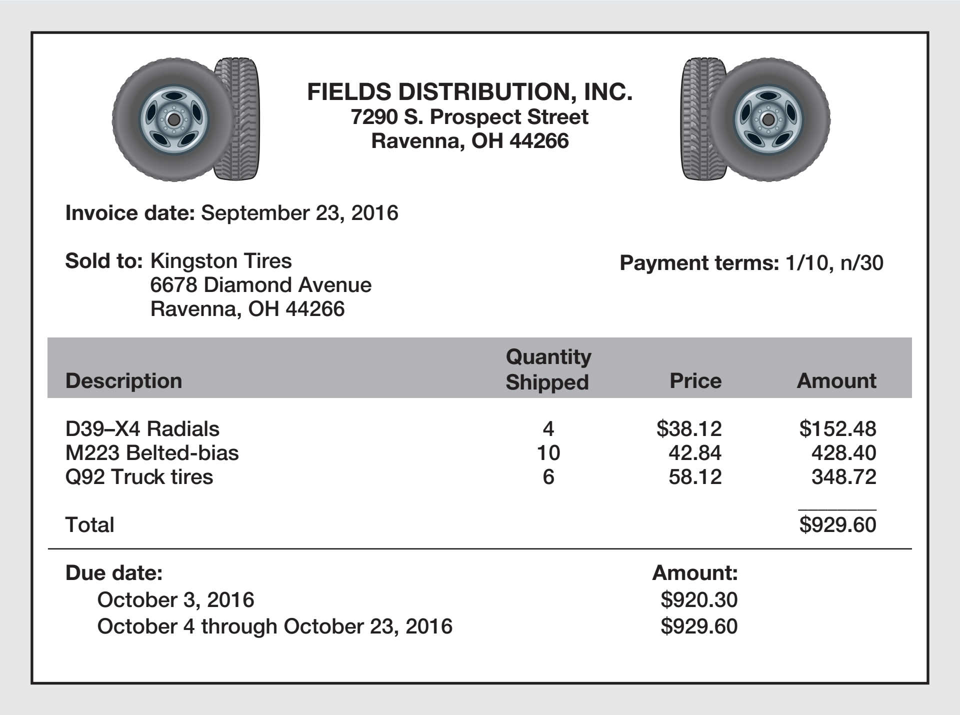
a. The cost of the merchandise inventory that the business has sold to customers.
b. An amount granted to the purchaser as an incentive to keep goods that are not "as ordered."
c. A type of merchandiser that buys merchandise either from a manufacturer or a wholesaler and then sells those goods to consumers.
d. A situation in which the buyer takes ownership (title) at the delivery destination point.
e. A type of merchandiser that buys goods from manufacturers and then sells them to retailers.
f. A discount that businesses offer to purchasers as an incentive for early payment.
g. A situation in which the buyer takes title to the goods after the goods leave the seller's place of business.
h. The terms of purchase or sale as stated on the invoice.
i. The amount a company has made on sales of merchandise inventory after returns and allowances and discounts have been taken out.
j. A seller's request for cash from the purchaser.

Learning Objective 2

3. Oct. 1 Cash $769.35

E5-16 Journalizing purchase transactions from an invoice

Kingston Tires received the following invoice from a supplier (Fields Distribution, Inc.):



FIELDS DISTRIBUTION, INC.
7290 S. Prospect Street
Ravenna, OH 44266

Invoice date: September 23, 2016

Sold to: Kingston Tires
6678 Diamond Avenue
Ravenna, OH 44266

Payment terms: 1/10, n/30

Description	Quantity Shipped	Price	Amount
D39–X4 Radials	4	$38.12	$152.48
M223 Belted-bias	10	42.84	428.40
Q92 Truck tires	6	58.12	348.72
Total			$929.60

Due date:	Amount:
October 3, 2016	$920.30
October 4 through October 23, 2016	$929.60

Requirements

1. Journalize the transaction required by Kingston Tires on September 23, 2016. Do not round numbers to the nearest whole dollar. Assume tires are purchased on account.
2. Journalize the return on Kingston's books on September 28, 2016, of the D39–X4 Radials, which were ordered by mistake. Do not round numbers to the nearest whole dollar.
3. Journalize the payment on October 1, 2016, to Fields Distribution, Inc. Do not round numbers to the nearest whole dollar.

Learning Objective 2

July 24 Merch. Inv. $90

E5-17 Journalizing purchase transactions

Hajjar Jewelers uses a perpetual inventory system and had the following purchase transactions. Journalize all necessary transactions. Explanations are not required.

Jun. 20	Purchased inventory of $5,700 on account from Slater Diamonds, a jewelry importer. Terms were 1/15, n/45, FOB shipping point.
20	Paid freight charges, $400.
Jul. 4	Returned $500 of inventory to Slater.
14	Paid Slater Diamonds, less return.
16	Purchased inventory of $4,100 on account from Swift Diamonds, a jewelry importer. Terms were 1/10, n/EOM, FOB destination.
18	Received a $300 allowance from Swift for damaged but usable goods.
24	Paid Swift Diamonds, less allowance and discount.

E5-18 Computing missing amounts

Learning Objective 3

Consider the following incomplete table of a merchandiser's profit data. Calculate the missing amounts to complete the table.

Sales	$ 87,600	$ 102,600	$ 66,200	$ *(f)*
Sales Returns and Allowances	970	*(b)*	1,550	950
Sales Discounts	600	860	420	2,070
Net Sales	86,030	98,190	*(d)*	*(g)*
Cost of Goods Sold	61,200	*(c)*	40,600	75,200
Gross Profit	*(a)*	33,490	*(e)*	37,330

E5-19 Journalizing sales transactions

Learning Objective 3

Jan. 13 Sales Discounts $97

Annie's Antiques uses a perpetual inventory system. Journalize the following sales transactions for Annie's Antiques. Explanations are not required.

Jan. 4	Sold $13,000 of antiques on account, credit terms are 1/15, n/30. Cost of goods is $6,500.
8	Received a $300 sales return on damaged goods from the customer. Cost of goods damaged is $150.
13	Annie's Antiques receives payment from the customer on the amount due from Jan. 4, less the return and discount.
20	Sold $4,400 of antiques on account, credit terms are 3/10, n/45, FOB destination. Cost of goods is $2,200.
20	Annie's Antiques paid $150 on freight out.
25	Annie's Antiques negotiated a $600 allowance on the goods sold on Jan. 20.
29	Receives payment from the customer on the amount due from Jan. 20, less the allowance and discount.

E5-20 Journalizing purchase and sales transactions

Learning Objectives 2, 3

Feb. 23 Cash $4,653

Peaceful Palace Gift Shop uses a perpetual inventory system. Journalize the following transactions for Peaceful Palace Gift Shop. Explanations are not required.

Feb. 3	Purchased $3,100 of merchandise inventory on account under terms 2/10, n/EOM and FOB shipping point.
7	Returned $600 of defective merchandise purchased on February 3.
9	Paid freight bill of $300 on February 3 purchase.
10	Sold merchandise inventory on account for $4,800. Payment terms were 3/15, n/30. These goods cost the company $2,400.
12	Paid amount owed on credit purchase of February 3, less the return and the discount.
16	Granted a sales allowance of $100 on the February 10 sale.
23	Received cash from February 10 customer in full settlement of their debt, less the allowance and the discount.

Learning Objectives 3, 4

2. Net Sales $71,400

E5-21 Journalizing adjusting entries and computing gross profit

Emerson St. John Book Shop uses a perpetual inventory system. Emerson St. John Book Shop's accounts at June 30, 2016, included the following unadjusted balances:

Merchandise Inventory	$ 5,400
Cost of Goods Sold	40,500
Sales Revenue	90,000
Sales Discounts	1,500
Sales Returns and Allowances	2,600

The cost associated with the physical count of inventory on hand on June 30, 2016, was $5,000.

Requirements

1. Journalize the adjustment for inventory shrinkage.
2. Compute the gross profit.

Use the following information to answer Exercises E5-22 through E5-24.

Quality Office Systems uses a perpetual inventory system. The adjusted trial balance of Quality Office Systems at March 31, 2016, follows:

QUALITY OFFICE SYSTEMS
Adjusted Trial Balance
March 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,100	
Accounts Receivable	13,800	
Merchandise Inventory	31,300	
Office Supplies	6,100	
Equipment	42,200	
Accumulated Depreciation—Equipment		$ 13,100
Accounts Payable		9,000
Salaries Payable		500
Notes Payable, long-term		8,000
Common Stock		14,000
Retained Earnings		100
Dividends	40,000	
Sales Revenue		234,000
Sales Returns and Allowances	1,500	
Sales Discounts	1,900	
Cost of Goods Sold	93,600	
Selling Expense	27,600	
Administrative Expense	14,600	
Interest Expense	2,000	
Total	**$ 278,700**	**$ 278,700**

E5-22 Journalizing closing entries

Learning Objective 4

2. Ending Retained Earnings Balance $52,900

Requirements

1. Journalize the required closing entries at March 31, 2016.
2. The following T-accounts have been set up: Income Summary; Retained Earnings; and Dividends. Post the closing entries to the T-accounts, and calculate their ending balances.
3. How much was Quality's net income or net loss?

E5-23 Preparing a single-step income statement

Learning Objective 5

Net Income $92,800

Prepare Quality Office Systems' *single-step* income statement for the year ended March 31, 2016.

E5-24 Preparing a multi-step income statement

Learning Objective 5

Gross Profit $137,000

Prepare Quality Office Systems' *multi-step* income statement for the year ended March 31, 2016.

E5-25 Computing the gross profit percentage

Learning Objective 6

Gross Profit Percentage 39%

Edible Art earned net sales revenue of $63,000,000 in 2016. Cost of goods sold was $40,950,000, and net income reached $8,000,000, the company's highest ever. Compute the company's gross profit percentage for 2016.

E5A-26 Journalizing purchase transactions—periodic inventory system

Learning Objective 7
Appendix 5A

Sep. 17 Cash $5,626

Landry Appliances had the following purchase transactions. Journalize all necessary transactions using the periodic inventory system. Explanations are not required.

Sep. 4	Purchased inventory of $6,200 on account from Max Appliance Wholesale, an appliance wholesaler. Terms were 3/15, n/30, FOB shipping point.
4	Paid freight charges, $410.
10	Returned $400 of inventory to Max.
17	Paid Max Appliance Wholesale, less return and discount.
20	Purchased inventory of $4,600 on account from MY Appliance, an appliance wholesaler. Terms were 3/10, n/45, FOB destination.
22	Received a $900 allowance from MY Appliance for damaged but usable goods.
29	Paid MY Appliance, less allowance and discount.

E5A-27 Journalizing sales transactions—periodic inventory system

Learning Objective 7
Appendix 5A

Aug. 24 Sales Discounts $50

Journalize the following sales transactions for Double Z Archery using the periodic inventory system. Explanations are not required.

Aug. 1	Sold $7,800 of equipment on account, credit terms are 2/10, n/30.
3	Received a $300 sales return on damaged goods from the customer.
8	Double Z received payment from the customer on the amount due from Aug. 1, less the return and discount.
15	Sold $3,200 of equipment on account, credit terms are 2/10, n/45, FOB destination.
15	Double Z paid $140 on freight out.
20	Double Z negotiated a $700 allowance on the goods sold on Aug. 15.
24	Received payment from the customer on the amount due from Aug. 15, less the allowance and discount.

Learning Objective 7
Appendix 5A

Nov. 22 Accounts Receivable $5,800

E5A-28 Journalizing purchase and sales transactions—periodic inventory system

Journalize the following transactions for Moody Bicycles using the periodic inventory system. Explanations are not required.

Nov. 2	Purchased $3,700 of merchandise inventory on account under terms 3/10, n/EOM and FOB shipping point.
6	Returned $600 of defective merchandise purchased on November 2.
8	Paid freight bill of $150 on November 2 purchase.
10	Sold merchandise inventory on account for $6,200. Payment terms were 1/15, n/45.
11	Paid amount owed on credit purchase of November 2, less the return and the discount.
15	Granted a sales allowance of $400 on the November 10 sale.
22	Received cash from November 10 customer in full settlement of their debt, less the allowance and the discount.

Learning Objective 7
Appendix 5A

2. Ending Retained Earnings Balance $72,600

E5A-29 Journalizing closing entries—periodic inventory system

Nautical Dream Boat Supply uses the periodic inventory method. The adjusted trial balance of Nautical Dream Boat Supply at December 31, 2016, follows:

NAUTICAL DREAM BOAT SUPPLY
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 3,700	
Accounts Receivable	15,700	
Merchandise Inventory (beginning)	44,700	
Office Supplies	8,800	
Equipment	59,900	
Accumulated Depreciation—Equipment		$ 19,900
Accounts Payable		12,000
Salaries Payable		1,000
Notes Payable, long-term		11,900
Common Stock		24,000
Retained Earnings		27,500
Dividends	60,700	
Sales Revenue		330,000
Sales Returns and Allowances	1,900	
Sales Discounts	2,100	
Interest Revenue		3,200
Purchases	274,600	
Purchase Returns and Allowances		94,200
Purchase Discounts		8,000
Selling Expense	38,700	
Administrative Expense	20,900	
Total	**$ 531,700**	**$ 531,700**

Requirements

1. Journalize the required closing entries at December 31, 2016. Assume ending Merchandise Inventory is $53,300.
2. Set up T-accounts for Income Summary; Retained Earnings; and Dividends. Post the closing entries to the T-accounts, and calculate their ending balances.
3. How much was Nautical Dream's net income or net loss?

Learning Objective 7
Appendix 5A

E5A-30 Computing cost of goods sold in a periodic inventory system

Zeta Electric uses the periodic inventory system. Zeta reported the following selected amounts at May 31, 2016:

Merchandise Inventory, June 1, 2015	$ 16,500	Freight In	$ 7,000
Merchandise Inventory, May 31, 2016	24,000	Sales Revenue	172,000
Purchases	90,000	Sales Discounts	7,000
Purchase Discounts	4,500	Sales Returns and Allowances	14,000
Purchase Returns and Allowances	6,500	Common Stock	32,000
		Retained Earnings	17,000

Compute the following for Zeta:

a. Net sales revenue.

b. Cost of goods sold.

c. Gross profit.

> Problems Group A

For all problems, assume the perpetual inventory system is used unless stated otherwise. Round all numbers to the nearest whole dollar unless stated otherwise.

Learning Objectives 1, 2, 3

Sep. 10 Cash $2,871

P5-31A Journalizing purchase and sale transactions

Journalize the following transactions that occurred in September 2016 for Aquamarines, assuming the perpetual inventory system is being used. No explanations are needed. Identify each accounts payable and accounts receivable with the vendor or customer name.

Sep. 3	Purchased merchandise inventory on account from Simmon Wholesalers, $4,500. Terms 1/15, n/EOM, FOB shipping point.
4	Paid freight bill of $70 on September 3 purchase.
4	Purchase merchandise inventory for cash of $1,500.
6	Returned $500 of inventory from September 3 purchase.
8	Sold merchandise inventory to Harvey Company, $6,200, on account. Terms 1/15, n/35. Cost of goods, $2,542.
9	Purchased merchandise inventory on account from Tex Wholesalers, $6,500. Terms 1/10, n/30, FOB destination.
10	Made payment to Simmon Wholesalers for goods purchased on September 3, less return and discount.
12	Received payment from Harvey Company, less discount.
13	After negotiations, received a $100 allowance from Tex Wholesalers.
15	Sold merchandise inventory to Jackson Company, $2,500, on account. Terms 3/10, n/EOM. Cost of goods, $1,125.
22	Made payment, less allowance, to Tex Wholesalers for goods purchased on September 9.
23	Jackson Company returned $300 of the merchandise sold on September 15. Cost of goods, $135.
25	Sold merchandise inventory to Sciavone for $1,400 on account that cost $546. Terms of 2/10, n/30 were offered, FOB shipping point. As a courtesy to Sciavone, $80 of freight was added to the invoice for which cash was paid by Aquamarines.
26	After negotiations, granted a $100 allowance to Sciavone for merchandise purchased on September 25.
29	Received payment from Sciavone, less allowance and discount.
30	Received payment from Jackson Company, less return.

P5-32A Journalizing purchase and sale transactions

Learning Objectives 1, 2, 3

Nov. 14 Merch. Inv. $40

Journalize the following transactions that occurred in November 2016 for Julies' Fun World, assuming the perpetual inventory system is being used. No explanations are needed. Identify each accounts payable and accounts receivable with the vendor or customer name.

Nov. 4	Purchased merchandise inventory on account from Vanderbilt Company, $9,600. Terms 1/10, n/EOM, FOB shipping point.
6	Paid freight bill of $110 on November 4 purchase.
8	Returned half of the inventory purchased on November 4 from Vanderbilt Company.
10	Sold merchandise inventory for cash, $1,500. Cost of goods, $600. FOB destination.
11	Sold merchandise inventory to Gilmore Corporation, $10,100, on account. Terms 1/10, n/EOM. Cost of goods, $5,050. FOB shipping point.
12	Paid freight bill of $80 on November 10 sale.
13	Sold merchandise inventory to Cadet Company for $8,500 on account, terms of 1/15, n/45. Cost of goods, $4,250. FOB shipping point.
14	Paid the amount owed on account from November 4, less return and discount.
16	After negotiations, granted a $700 allowance to Gilmore Corporation on November 11 sale.
17	Received defective inventory as a sales return from the November 13 sale, $100. Cost of goods, $50.
18	Purchased inventory of $3,500 on account from Rainman Corporation. Payment terms were 3/10, n/30, FOB destination.
20	Received cash from Gilmore Corporation, less allowance and discount.
26	Paid amount owed on account from November 18, less discount.
28	Received cash from Cadet Company, less return and discount.
29	Purchased inventory from Sugarman Corporation for cash, $12,200, FOB shipping point. Freight in paid to shipping company, $230.

Learning Objectives 4, 5

1. Operating Income $59,050

P5-33A Preparing a multi-step income statement, journalizing closing entries, and preparing a post-closing trial balance

Sylvia's Music Company uses a perpetual inventory system. The adjusted trial balance of Sylvia's Music Company at June 30, 2016, follows:

SYLVIA'S MUSIC COMPANY
Adjusted Trial Balance
June 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,300	
Accounts Receivable	38,600	
Merchandise Inventory	17,500	
Office Supplies	750	
Furniture	39,700	
Accumulated Depreciation—Furniture		$ 8,400
Accounts Payable		13,900
Salaries Payable		900
Unearned Revenue		7,500
Notes Payable, long-term		17,000
Common Stock		4,000
Retained Earnings		28,250
Dividends	42,000	
Sales Revenue		190,000
Sales Returns and Allowances	1,000	
Sales Discounts	2,500	
Cost of Goods Sold	85,500	
Selling Expense	18,600	
Administrative Expense	17,500	
Interest Expense	2,000	
Total	**$ 269,950**	**$ 269,950**

Requirements

1. Prepare Sylvia's multi-step income statement for the year ended June 30, 2016.
2. Journalize Sylvia's closing entries.
3. Prepare a post-closing trial balance as of June 30, 2016.

Learning Objectives 4, 5

2. Total Credits $482,880

P5-34A Journalizing adjusting entries, preparing adjusted trial balance, and preparing financial statements

Trevor Electronics Company uses a perpetual inventory system. The unadjusted trial balance of Trevor Electronics Company at March 31, 2016, follows:

TREVOR ELECTRONICS COMPANY
Unadjusted Trial Balance
March 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 3,900	
Accounts Receivable	35,400	
Interest Receivable	0	
Merchandise Inventory	45,900	
Office Supplies	6,500	
Equipment	134,000	
Accumulated Depreciation—Equipment		$ 37,500
Accounts Payable		16,500
Salaries Payable		0
Interest Payable		0
Unearned Revenue		13,000
Notes Payable, long-term		47,000
Common Stock		30,000
Retained Earnings		35,150
Dividends	28,000	
Sales Revenue		305,000
Sales Returns and Allowances	7,500	
Sales Discounts	1,500	
Interest Revenue		0
Cost of Goods Sold	167,750	
Salaries Expense (Selling)	22,000	
Rent Expense (Selling)	15,800	
Salaries Expense (Administrative)	5,500	
Utilities Expense (Administrative)	10,400	
Depreciation Expense—Equipment (Administrative)	0	
Interest Expense	0	
Total	**$ 484,150**	**$ 484,150**

Requirements

1. Journalize the adjusting entries using the following data:
    - **a.** Interest revenue accrued, $100.
    - **b.** Salaries (Selling) accrued, $2,700.
    - **c.** Depreciation expense—Equipment (Administrative), $1,340.
    - **d.** Interest expense accrued, $1,400.
    - **e.** A physical count of inventory was completed. The ending Merchandise Inventory should have balance of $45,400.
2. Prepare Trevor Electronics's adjusted trial balance as of March 31, 2016.
3. Prepare Trevor Electronics's *multi-step* income statement for year ended March 31, 2016.
4. Prepare Trevor Electronics's statement of retained earnings for year ended March 31, 2016.
5. Prepare Trevor Electronics's classified balance sheet in *report form* as of March 31, 2016.

Learning Objectives 5, 6

2. Operating Income $80,700

P5-35A Preparing a single-step income statement, preparing a multi-step income statement, and computing the gross profit percentage

Culinary Creations Beef Company uses a perpetual inventory system. The records of Culinary Creations Beef Company list the following selected accounts for the quarter ended April 30, 2016:

Interest Revenue	$ 500	Accounts Payable	$ 16,900
Merchandise Inventory	45,300	Accounts Receivable	38,000
Notes Payable, long-term	52,000	Accumulated Depreciation—Equipment	1,290
Salaries Payable	2,400	Common Stock	32,000
Sales Discounts	5,500	Retained Earnings	10,200
Sales Returns and Allowances	8,500	Dividends	17,000
Sales Revenue	306,000	Cash	7,400
Rent Expense (Selling)	21,400	Cost of Goods Sold	167,750
Office Supplies	6,300	Equipment	130,000
Unearned Revenue	13,200	Interest Payable	1,000
Interest Expense	1,700	Rent Expense (Administrative)	9,100
Depreciation Expense—Equipment (Administrative)	1,300	Utilities Expense (Selling)	10,500
Utilities Expense (Administrative)	4,300	Delivery Expense (Selling)	3,900

Requirements

1. Prepare a single-step income statement.
2. Prepare a multi-step income statement.
3. J. Davis, manager of the company, strives to earn a gross profit percentage of at least 50%. Did this goal? Show your calculations.

P5A-36A Journalizing purchase and sale transactions—periodic inventory system

Learning Objective 7
Appendix 5A

Mar. 10 Cash $5,238

Journalize the following transactions that occurred in March 2016 for Dream Line Company. Assume Dream Line uses the periodic inventory system. No explanations are needed. Identify each accounts payable and accounts receivable with the vendor or customer name.

Mar. 3	Purchased merchandise inventory on account from Silton Wholesalers, $6,500. Terms 3/15, n/EOM, FOB shipping point.
4	Paid freight bill of $45 on March 3 purchase.
4	Purchased merchandise inventory for cash of $2,100.
6	Returned $1,100 of inventory from March 3 purchase.
8	Sold merchandise inventory to Hayes Company, $3,200, on account. Terms 1/15, n/35.
9	Purchased merchandise inventory on account from Tarin Wholesalers, $5,300. Terms 3/10, n/30, FOB destination.
10	Made payment to Silton Wholesalers for goods purchased on March 3, less return and discount.
12	Received payment from Hayes Company, less discount.
13	After negotiations, received a $100 allowance from Tarin Wholesalers.
15	Sold merchandise inventory to Julian Company, $2,200, on account. Terms 2/10, n/EOM.
22	Made payment, less allowance, to Tarin Wholesalers for goods purchased on March 9.
23	Julian Company returned $100 of the merchandise sold on March 15.
25	Sold merchandise inventory to Smecker for $800 on account. Terms of 2/10, n/30 was offered, FOB shipping point.
26	After negotiations, granted a $200 allowance to Smecker for merchandise sold on March 25.
29	Received payment from Smecker, less allowance and discount.
30	Received payment from Julian Company, less return.

Learning Objective 7
Appendix 5A

1. Gross Profit $200,200

P5A-37A Preparing a multi-step income statement and journalizing closing entries

Travis Department Store uses a periodic inventory system. The adjusted trial balance of Travis Department Store at December 31, 2016, follows:

TRAVIS DEPARTMENT STORE
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 7,700	
Accounts Receivable	85,200	
Merchandise Inventory (beginning)	37,500	
Office Supplies	800	
Furniture	89,000	
Accumulated Depreciation—Furniture		$ 18,300
Accounts Payable		28,700
Salaries Payable		2,600
Unearned Revenue		14,200
Notes Payable, long-term		33,000
Common Stock		70,000
Retained Earnings		13,100
Dividends	89,500	
Sales Revenue		387,000
Sales Returns and Allowances	6,700	
Sales Discounts	4,300	
Purchases	294,000	
Purchase Returns and Allowances		113,000
Purchase Discounts		6,700
Freight In	500	
Selling Expense	41,900	
Administrative Expense	26,500	
Interest Expense	3,000	
Total	**$ 686,600**	**$ 686,600**

Requirements

1. Prepare Travis Department Store's multi-step income statement for the year ended December 31, 2016. Assume ending Merchandise Inventory is $36,500.
2. Journalize Travis Department Store's closing entries.

> Problems Group B

For all problems, assume the perpetual inventory system is used unless stated otherwise. Round all numbers to the nearest whole dollar unless stated otherwise.

P5-38B Journalizing purchase and sale transactions

Learning Objectives 1, 2, 3

Feb. 12 Cash $5,586

Journalize the following transactions that occurred in September 2016 for Violet, assuming the perpetual inventory system is being used. No explanations are needed. Identify each accounts payable and accounts receivable with the vendor or customer name.

Feb. 3 Purchased merchandise inventory on account from Sharpner Wholesalers, $4,500. Terms 2/15, n/EOM, FOB shipping point.
4 Paid freight bill of $40 on September 3 purchase.
4 Purchase merchandise inventory for cash of $2,300.
6 Returned $1,300 of inventory from September 3 purchase.
8 Sold merchandise inventory to Herenda Company, $6,200, on account. Terms 3/15, n/35. Cost of goods, $2,852.
9 Purchased merchandise inventory on account from Teddy Wholesalers, $11,000. Terms 2/10, n/30, FOB destination.
10 Made payment to Sharpner Wholesalers for goods purchased on September 3, less return and discount.
12 Received payment from Herenda Company, less discount.
13 After negotiations, received a $500 allowance from Teddy Wholesalers.
15 Sold merchandise inventory to Jeeves Company, $3,500, on account. Terms 3/10, n/EOM. Cost of goods, $1,610.
22 Made payment, less allowance, to Teddy Wholesalers for goods purchased on September 9.
23 Jeeves Company returned $400 of the merchandise sold on September 15. Cost of goods, $184.
25 Sold merchandise inventory to Smithsons for $1,300 on account that cost $520. Terms of 2/10, n/30 were offered, FOB shipping point. As a courtesy to Smithsons, $90 of freight was added to the invoice for which cash was paid by Violet.
26 After negotiations, granted a $300 allowance to Smithsons for merchandise purchased on September 25.
29 Received payment from Smithsons, less allowance and discount.
30 Received payment from Jeeves Company, less return.

Learning Objectives 1, 2, 3

Jan. 14 Merch. Inv. $25

P5-39B Journalizing purchase and sale transactions

Journalize the following transactions that occurred in November 2016 for Sylvia's Wonder Park, assuming the perpetual inventory system is being used. No explanations are needed. Identify each accounts payable and accounts receivable with the vendor or customer name.

Jan. 4	Purchased merchandise inventory on account from Vavoom Company, $6,000. Terms 1/10, n/EOM, FOB shipping point.
6	Paid freight bill of $130 on November 4 purchase.
8	Returned half of the inventory purchased on November 4 from Vavoom Company.
10	Sold merchandise inventory for cash, $1,100. Cost of goods, $440. FOB destination.
11	Sold merchandise inventory to Graceland Corporation, $10,800, on account. Terms 3/10, n/EOM. Cost of goods, $5,400. FOB shipping point.
12	Paid freight bill of $50 on November 10 sale.
13	Sold merchandise inventory to Cador Company for $9,400 on account, terms of 2/15, n/45. Cost of goods, $4,700. FOB shipping point.
14	Paid the amount owed on account from November 4, less return and discount.
16	After negotiations, granted a $300 allowance to Graceland Corporation on November 11 sale.
17	Received defective inventory as a sales return from the November 13 sale, $200. Cost of goods, $100.
18	Purchased inventory of $3,500 on account from Russo Corporation. Payment terms were 3/10, n/30, FOB destination.
20	Received cash from Graceland Corporation, less allowance and discount.
26	Paid amount owed on account from November 18, less discount.
28	Received cash from Cador Company, less return and discount.
29	Purchased inventory from Shanley Corporation for cash, $12,500, FOB shipping point. Freight in paid to shipping company, $150.

P5-40B Preparing a multi-step income statement, journalizing closing entries, and preparing a post-closing trial balance

Learning Objectives 4, 5

1. Operating Income $62,600

Pamela Potter Theater Company uses a perpetual inventory system. The adjusted trial balance of Pamela Potter Theater Company at June 30, 2016, follows:

PAMELA POTTER THEATER COMPANY
Adjusted Trial Balance
June 30, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,000	
Accounts Receivable	38,800	
Merchandise Inventory	17,600	
Office Supplies	500	
Furniture	40,200	
Accumulated Depreciation—Furniture		$ 8,100
Accounts Payable		13,900
Salaries Payable		1,100
Unearned Revenue		6,800
Notes Payable, long-term		14,000
Common Stock		8,000
Retained Earnings		22,500
Dividends	41,500	
Sales Revenue		182,000
Sales Returns and Allowances	1,500	
Sales Discounts	5,000	
Cost of Goods Sold	72,800	
Selling Expense	18,900	
Administrative Expense	14,500	
Interest Expense	1,100	
Total	**$ 256,400**	**$ 256,400**

Requirements

1. Prepare Pamela Potter's multi-step income statement for the year ended June 30, 2016.
2. Journalize Pamela Potter's closing entries.
3. Prepare a post-closing trial balance as of June 30, 2016.

Learning Objectives 4, 5

2. Total Credits $490,410

P5-41B Journalizing adjusting entries, preparing adjusted trial balance, and preparing financial statements

Trudel Electronics Company uses a perpetual inventory system. The unadjusted trial balance of Trudel Electronics Company at March 31, 2016, follows:

TRUDEL ELECTRONICS COMPANY
Unadjusted Trial Balance
March 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 4,300	
Accounts Receivable	33,800	
Interest Receivable	0	
Merchandise Inventory	45,700	
Office Supplies	5,400	
Equipment	130,500	
Accumulated Depreciation—Equipment		$ 37,900
Accounts Payable		16,000
Salaries Payable		0
Interest Payable		0
Unearned Revenue		13,100
Notes Payable, long-term		45,000
Common Stock		50,000
Retained Earnings		10,400
Dividends	23,000	
Sales Revenue		306,000
Sales Returns and Allowances	6,000	
Sales Discounts	5,000	
Interest Revenue		0
Cost of Goods Sold	168,300	
Salaries Expense (Selling)	25,000	
Rent Expense (Selling)	15,600	
Salaries Expense (Administrative)	4,800	
Utilities Expense (Administrative)	11,000	
Depreciation Expense—Equipment (Administrative)	0	
Interest Expense	0	
Total	**$ 478,400**	**$ 478,400**

Requirements

1. Journalize the adjusting entries using the following data:
    - **a.** Interest revenue accrued, $350.
    - **b.** Salaries (Selling) accrued, $3,300.
    - **c.** Depreciation expense—Equipment (Administrative), $1,305.
    - **d.** Interest expense accrued, $1,300.
    - **e.** A physical count of inventory was completed. The ending Merchandise Inventory should have balance of $45,000.
2. Prepare Trudel Electronics's adjusted trial balance as of March 31, 2016.
3. Prepare Trudel Electronics's *multi-step* income statement for year ended March 31, 2016.
4. Prepare Trudel Electronics's statement of retained earnings for year ended March 31, 2016.
5. Prepare Trudel Electronics's classified balance sheet in *report form* as of March 31, 2016.

P5-42B Preparing a single-step income statement, preparing a multi-step income statement, and computing the gross profit percentage

Learning Objectives 5, 6

2. Operating Income $96,595

Farm Fresh Beef Company uses a perpetual inventory system. The records of Farm Fresh Beef Company list the following selected accounts for the quarter ended April 30, 2016:

Interest Revenue	$ 700	Accounts Payable	$ 17,200
Merchandise Inventory	45,500	Accounts Receivable	33,300
Notes Payable, long-term	44,000	Accumulated Depreciation—Equipment	36,800
Salaries Payable	2,900	Common Stock	32,000
Sales Discounts	4,500	Retained Earnings	5,105
Sales Returns and Allowances	8,300	Dividends	25,000
Sales Revenue	317,800	Cash	7,900
Rent Expense (Selling)	21,800	Cost of Goods Sold	158,600
Office Supplies	6,100	Equipment	130,500
Unearned Revenue	13,900	Interest Payable	700
Interest Expense	1,600	Rent Expense (Administrative)	9,000
Depreciation Expense—Equipment (Administrative)	1,305	Utilities Expense (Selling)	10,000
Utilities Expense (Administrative)	4,300	Delivery Expense (Selling)	3,400

Requirements

1. Prepare a single-step income statement.
2. Prepare a multi-step income statement.
3. C. Davis, manager of the company, strives to earn a gross profit percentage of at least 50%. Did he achieve his goal? Show your calculations.

Learning Objective 7
Appendix 5A

Jun. 10 Purchase Discount $120

P5A-43B Journalizing purchase and sale transactions—periodic inventory system

Journalize the following transactions that occurred in June 2016 for Dixie Company. Assume Dixie uses the periodic inventory system. No explanations are needed. Identify each accounts payable and accounts receivable with the vendor or customer name.

Jun. 3 Purchased merchandise inventory on account from Shue Wholesalers, $4,500. Terms 3/15, n/EOM, FOB shipping point.
4 Paid freight bill of $75 on June 3 purchase.
4 Purchased merchandise inventory for cash of $1,300.
6 Returned $500 of inventory from June 3 purchase.
8 Sold merchandise inventory to Herman Company, $3,800, on account. Terms 3/15, n/35.
9 Purchased merchandise inventory on account from Tex Wholesalers, $4,700. Terms 2/10, n/30, FOB destination.
10 Made payment to Shue Wholesalers for goods purchased on June 3, less return and discount.
12 Received payment from Herman Company, less discount.
13 After negotiations, received a $500 allowance from Tex Wholesalers.
15 Sold merchandise inventory to Jeter Company, $1,800, on account. Terms 3/10, n/EOM.
22 Made payment, less allowance, to Tex Wholesalers for goods purchased on June 9.
23 Jeter Company returned $100 of the merchandise sold on June 15.
25 Sold merchandise inventory to Small for $600 on account. Terms of 2/10, n/30 was offered, FOB shipping point.
26 After negotiations, granted a $200 allowance to Small for merchandise sold on June 25.
29 Received payment from Small, less allowance and discount.
30 Received payment from Jeter Company, less return.

P5A-44B Preparing a multi-step income statement and journalizing closing entries

Learning Objective 7
Appendix 5A

1. Gross Profit $209,000

Tilton Department Store uses a periodic inventory system. The adjusted trial balance of Tilton Department Store at December 31, 2016, follows:

TILTON DEPARTMENT STORE
Adjusted Trial Balance
December 31, 2016

	Balance	
Account Title	**Debit**	**Credit**
Cash	$ 7,700	
Accounts Receivable	84,900	
Merchandise Inventory (beginning)	37,300	
Office Supplies	700	
Furniture	81,000	
Accumulated Depreciation—Furniture		$ 18,100
Accounts Payable		29,100
Salaries Payable		2,100
Unearned Revenue		14,300
Notes Payable, long-term		38,000
Common Stock		60,000
Retained Earnings		1,500
Dividends	88,700	
Sales Revenue		395,000
Sales Returns and Allowances	6,400	
Sales Discounts	4,300	
Purchases	290,000	
Purchase Returns and Allowances		109,000
Purchase Discounts		7,000
Freight In	700	
Selling Expense	42,300	
Administrative Expense	26,800	
Interest Expense	3,300	
Total	**$ 674,100**	**$ 674,100**

Requirements

1. Prepare Tilton Department Store's multi-step income statement for the year ended December 31, 2016. Assume ending Merchandise Inventory is $36,700.
2. Journalize Tilton Department Store's closing entries.

> Continuing Problem

P5-45 Journalizing purchase and sale transactions, making closing entries, preparing financial statements, and computing the gross profit percentage

This problem continues the Daniels Consulting situation from Problem P4-40 of Chapter 4. Daniels Consulting performs systems consulting. The company has also begun selling accounting software and uses the perpetual inventory system to account for software inventory. During January, Daniels Consulting completed the following transactions:

Jan. 2	Completed a consulting engagement and received cash of $5,700.
2	Prepaid three months office rent, $2,400.
7	Purchased 50 units software inventory on account, $1,050, plus freight in, $50.
18	Sold 40 software units on account, $2,625 (cost $880).
19	Consulted with a client for a fee of $2,500 on account.
20	Paid employee salaries, $1,885, which includes accrued salaries from December.
21	Paid on account, $1,100.
22	Purchased 185 units software inventory on account, $4,810.
24	Paid utilities, $375.
28	Sold 135 units software for cash, $5,265 (cost $3,470).
31	Recorded the following adjusting entries: a. Accrued salaries expense, $775 b. Depreciation on Equipment, $60; Depreciation on Furniture, $50 c. Expiration of prepaid rent, $800 d. Physical count of software inventory, 50 units, $1,300

Requirements

1. Open the following T-accounts in the ledger: Cash, $17,950; Accounts Receivable, $3,600; Software Inventory, $0; Office Supplies, $300; Prepaid Rent, $0; Equipment, $3,600; Accumulated Depreciation—Equipment, $60; Furniture, $3,000; Accumulated Depreciation—Furniture, $50; Accounts Payable, $3,600; Unearned Revenue, $1,800; Salaries Payable, $685; Common Stock, $20,000; Retained Earnings, $2,255; Dividends, $0; Income Summary, $0; Service Revenue, $0; Sales Revenue, $0; Cost of Goods Sold, $0; Salaries Expense, $0; Rent Expense, $0; Utilities Expense, $0; Depreciation Expense—Equipment, $0; and Depreciation Expense—Furniture, $0.
2. Journalize and post the January transactions. Compute each account balance, and denote the balance as *Bal.*
3. Prepare the month ended January 31, 2017, income statement of Daniels Consulting. Use the multi-step format. List Service Revenue under gross profit and ignore classifying the expenses as selling and administrative.
4. Journalize and post the closing entries. Denote each closing amount as *Clo.* After posting all closing entries, prove the equality of debits and credits in the ledger.
5. Compute the gross profit percentage of Daniels Consulting.

> Practice Set

This problem continues the Crystal Clear Cleaning practice set begun in Chapter 2 and continued through Chapters 3 and 4.

P5-46 Journalizing purchase and sale transactions, making closing entries, preparing financial statements, and computing the gross profit percentage

Crystal Clear Cleaning has decided that, in addition to providing cleaning services, it will sell cleaning products. Crystal Clear uses the perpetual inventory system. During December 2017, Crystal Clear completed the following transactions:

Dec. 2	Purchased 475 units of inventory for $2,850 on account from Sparkle, Co. on terms, 3/10, n/20.
5	Purchased 600 units of inventory from Borax on account with terms 2/10, n/30. The total invoice was for $4,500, which included a $150 freight charge.
7	Returned 75 units of inventory to Sparkle from the December 2 purchase (cost $450).
9	Paid Borax.
11	Sold 285 units of goods to Happy Maids for $3,990 on account with terms 3/10, n/30. Crystal Clear's cost of the goods was $1,710.
12	Paid Sparkle.
15	Received 22 units with a retail price of $308 of goods back from customer Happy Maids. The goods cost Crystal Clear $132.
21	Received payment from Happy Maids, settling the amount due in full.
28	Sold 265 units of goods to Bridget, Inc. for cash of $3,975 (cost $1,691).
29	Paid cash for utilities of $415.
30	Paid cash for Sales Commission Expense of $550.
31	Recorded the following adjusting entries: a. Physical count of inventory on December 31 showed 428 units of goods on hand, $3,148 b. Depreciation, $270 c. Accrued salaries expense of $725 d. Prepared all other adjustments necessary for December (Hint: You will need to review the adjustment information in Chapter 3 to determine the remaining adjustments). Assume the cleaning supplies left at December 31 are $30.

Requirements

1. Open the following T-accounts in the ledger: Cash, $138,150; Accounts Receivable, $2,600; Merchandise Inventory, $0; Cleaning Supplies, $30; Prepaid Rent, $1,500; Prepaid Insurance, $1,650; Equipment, $3,200; Truck, $7,000; Accumulated Depreciation—Equipment and Truck, $270; Accounts Payable, $1,470; Unearned Revenue, $11,500; Salaries Payable, $0; Interest Payable, $240; Notes Payable (Long-term), $96,000; Common Stock, $42,000; Retained Earnings, $2,650; Dividends, $0; Income Summary, $0; Service Revenue, $0; Sales Revenue, $0; Sales Returns and Allowances, $0; Sales Discounts, $0; Cost of Goods Sold, $0; Sales Commission Expense, $0; Utilities Expense, $0; Depreciation Expense, $0; Salaries Expense, $0; Insurance Expense, $0; Rent Expense, $0; Interest Expense, $0.
2. Journalize and post the December transactions. Compute each account balance, and denote the balance as *Bal.* Identify each accounts payable and accounts receivable with the vendor or customer name.

3. Journalize and post the adjusting entries. Denote each adjusting amount as *Adj.* Compute each account balance, and denote the balance as *Bal.* After posting all adjusting entries, prove the equality of debits and credits in the ledger.
4. Prepare the December multi-step income statement, statement of retained earnings, and classified balance sheet for the company. List Service Revenue under gross profit, and ignore classifying the expenses as selling and administrative.
5. Journalize the December closing entries for the company.
6. Compute the gross profit percentage for the company.

COMPREHENSIVE PROBLEM

> Comprehensive Problem for Chapters 1–5

Completing a Merchandiser's Accounting Cycle

St. John Technology uses a perpetual inventory system. The end-of-month unadjusted trial balance of St. John Technology at January 31, 2016, follows:

ST. JOHN TECHNOLOGY
Unadjusted Trial Balance
January 31, 2016

	Balance	
Account	**Debit**	**Credit**
Cash	$ 12,660	
Accounts Receivable	15,390	
Merchandise Inventory	58,000	
Office Supplies	3,330	
Building	195,000	
Accumulated Depreciation—Building		$ 45,000
Furniture	53,000	
Accumulated Depreciation—Furniture		6,200
Accounts Payable		24,775
Salaries Payable		0
Unearned Revenue		6,150
Notes Payable, long-term		78,000
Common Stock		120,000
Retained Earnings		42,120
Dividends	8,200	
Sales Revenue		154,795
Sales Discounts	7,350	
Sales Returns and Allowances	5,075	
Cost of Goods Sold	87,665	
Selling Expense	19,830	
Administrative Expense	11,540	
Total	**$ 477,040**	**$ 477,040**

Additional data at January 31, 2016:

a. Office Supplies consumed during the month, $1,780. Half is selling expense, and the other half is administrative expense.
b. Depreciation for the month: building, $4,500; furniture, $2,600. One-fourth of depreciation is selling expense, and three-fourths is administrative expense.
c. Unearned revenue that has been earned during January, $3,825.
d. Accrued salaries, an administrative expense, $975.
e. Merchandise Inventory on hand, $55,375. St. John uses the perpetual inventory system.

Requirements

1. Using T-accounts, open the accounts listed on the trial balance, inserting their unadjusted balances. Label the balances as *Bal.* Also open the Income Summary account.
2. Journalize and post the adjusting entries at January 31. Compute the ending balances in the T-accounts, and denote as *Bal.*
3. Enter the unadjusted trial balance on a worksheet, and complete the worksheet for the month ended January 31, 2016. St. John Technology groups all operating expenses under two accounts, Selling Expense and Administrative Expense. Leave two blank lines under Selling Expense and three blank lines under Administrative Expense.
4. Prepare the company's *multi-step* income statement and statement of retained earnings for the month ended January 31, 2016. Also prepare the balance sheet at that date in *report* form.
5. Journalize and post the closing entries at January 31.

CRITICAL THINKING

> Decision Case 5-1

Party-Time T-Shirts sells T-shirts for parties at the local college. The company completed the first year of operations, and the shareholders are generally pleased with operating results as shown by the following income statement:

PARTY-TIME T-SHIRTS
Income Statement
Year Ended December 31, 2015

Net Sales Revenue	$ 350,000
Cost of Goods Sold	210,000
Gross Profit	140,000
Operating Expenses:	
Selling Expense	40,000
Administrative Expense	25,000
Net Income	**$ 75,000**

Bill Hildebrand, the controller, is considering how to expand the business. He proposes two ways to increase profits to $100,000 during 2016.

a. Hildebrand believes he should advertise more heavily. He believes additional advertising costing $20,000 will increase net sales by 30% and leave administrative expense unchanged. Assume that Cost of Goods Sold will remain at the same percentage of net sales as in 2015, so if net sales increase in 2016, Cost of Goods Sold will increase proportionately.

b. Hildebrand proposes selling higher-margin merchandise, such as party dresses, in addition to the existing product line. An importer can supply a minimum of 1,000 dresses for $40 each; Party-Time can mark these dresses up 100% and sell them for $80. Hildebrand realizes he will have to advertise the new merchandise, and this advertising will cost $5,000. Party-Time can expect to sell only 80% of these dresses during the coming year.

Help Hildebrand determine which plan to pursue. Prepare a single-step income statement for 2016 to show the expected net income under each plan.

> Ethical Issue 5-1

Dobbs Wholesale Antiques makes all sales under terms of FOB shipping point. The company usually ships inventory to customers approximately one week after receiving the order. For orders received late in December, Kathy Dobbs, the owner, decides when to ship the goods. If profits are already at an acceptable level, Dobbs delays shipment until January. If profits for the current year are lagging behind expectations, Dobbs ships the goods during December.

Requirements

1. Under Dobbs's FOB policy, when should the company record a sale?
2. Do you approve or disapprove of Dobbs's manner of deciding when to ship goods to customers and record the sales revenue? If you approve, give your reason. If you disapprove, identify a better way to decide when to ship goods. (There is no accounting rule against Dobbs's practice.)

> Fraud Case 5-1

Rae Philippe was a warehouse manager for Atkins Oilfield Supply, a business that operated across eight Western states. She was an old pro and had known most of the other warehouse managers for many years. Around December each year, auditors would come to do a physical count of the inventory at each warehouse. Recently, Rae's brother started his own drilling company and persuaded Rae to "loan" him 80 joints of 5-inch drill pipe to use for his first well. He promised to have it back to Rae by December, but the well encountered problems and the pipe was still in the ground. Rae knew the auditors were on the way, so she called her friend Andy, who ran another Atkins warehouse. "Send me over 80 joints of 5-inch pipe tomorrow, and I'll get them back to you ASAP," said Rae. When the auditors came, all the pipe on the books was accounted for, and they filed a "no-exception" report.

Requirements

1. Is there anything the company or the auditors could do in the future to detect this kind of fraudulent practice?
2. How would this kind of action affect the financial performance of the company?

> Financial Statement Case 5-1

This case uses both the income statement (consolidated statement of earnings) and the balance sheet of **Starbucks Corporation**. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to the Starbucks Corporation Fiscal 2013 Annual Report.

Requirements

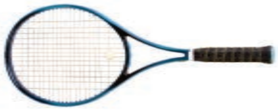
1. What was the value of the company's inventory at September 29, 2013, and September 30, 2012?
2. Review Note 5 (specifically Inventories) in the Notes to Consolidated Financial Statements. What do Starbucks' inventories consist of?
3. What was the amount of Starbucks's cost of goods sold (cost of sales) for the year ending September 29, 2013, and the year ending September 30, 2012?
4. What income statement format does Starbucks use? Explain.
5. Compute Starbucks's gross profit percentage for the year ending September 29, 2013, and the year ending September 30, 2012. Did the gross profit percentage improve, worsen, or hold steady? Assuming the industry average for gross profit percentage is 58.58%, how does Starbucks compare in the industry?

MyAccountingLab **For a wealth of online resources, including exercises, problems, media, and immediate tutorial help, please visit http://www.myaccountinglab.com.**

> Quick Check Answers

1. d **2.** a **3.** c **4.** c **5.** b **6.** a **7.** a **8.** d **9.** a **10A.** d

6 Merchandise Inventory



What Is the Cost of This Merchandise Inventory?

Jorell was excited about the most recent shipment of merchandise inventory that he received today. As the controller of a successful sporting goods store, he has decided to expand the merchandise inventory line by offering outdoor cooking items such as grills, cookers, and accessories. He believes that this new merchandise inventory will draw new customers to the store and eventually bring more profits to the business.

As Jorell prepares the merchandise inventory for sale, he must decide how the business will track the cost of each product sold. For example, if the business sells 500 identical outdoor grills that were purchased at different times and at different costs, how will the business determine the cost of each grill sold? Should the business keep detailed cost records for each specific grill sold? Or should the business use an inventory costing method that will approximate the flow of inventory costs? For example, the business might decide to assign the costs of the first grills purchased to the first grills sold rather than tracking the cost of each grill individually. Or it might decide, instead, to assign the costs of the last grills purchased to the first grills sold.

Jorell understands that he has several options when it comes to selecting an inventory costing method. He wants to select a method that will be relatively easy to implement and maintain. He knows that by selecting the best method for the business, he will be able to easily determine the cost of the goods sold and, ultimately, the gross profit.

What Is the Cost of Merchandise Inventory?

In this chapter, we expand our discussion on merchandise inventory by learning how to account for the cost of inventory. When Dick's Sporting Goods, Inc., a retail chain that sells sporting goods, apparel, and footwear, purchases and sells inventory, the business must account for the inventory appropriately. Dick's must determine the cost of the inventory that is sold in order to calculate gross profit. If a business had only a small amount of inventory, identifying the cost of one particular item would be simple. However, large businesses, such as Dick's, have millions of items of inventory, which makes tracking costs very difficult. In this chapter, you learn that every business must select an inventory costing method that allows it to track costs and determine the cost of goods sold, gross profit, and value of ending merchandise inventory.

Chapter 6 Learning Objectives

1. Identify accounting principles and controls related to merchandise inventory
2. Account for merchandise inventory costs under a perpetual inventory system
3. Compare the effects on the financial statements when using the different inventory costing methods
4. Apply the lower-of-cost-or-market rule to merchandise inventory
5. Measure the effects of merchandise inventory errors on the financial statements
6. Use inventory turnover and days' sales in inventory to evaluate business performance
7. Account for merchandise inventory costs under a periodic inventory system (Appendix 6A)

WHAT ARE THE ACCOUNTING PRINCIPLES AND CONTROLS THAT RELATE TO MERCHANDISE INVENTORY?

Chapter 5 introduced accounting for merchandise inventory. It showed how Smart Touch Learning, a fictitious merchandiser that sells tablet computers containing e-learning software programs, recorded the purchase and sale of its inventory. The current chapter completes the accounting for merchandise inventory.

Learning Objective 1
Identify accounting principles and controls related to merchandise inventory

Accounting Principles

Let's begin by learning about several accounting principles that affect merchandise inventories. Among them are consistency, disclosure, materiality, and accounting conservatism.

Consistency Principle

The **consistency principle** states that businesses should use the same accounting methods and procedures from period to period. Consistency helps investors and creditors compare a company's financial statements from one period to the next.

Suppose you are analyzing a company's net income over a two-year period in which there was an increase in net income from the first year to the second. Analysis of the income statement shows Sales Revenue was almost the same for both years, but Cost of Goods Sold decreased significantly, which resulted in increases in gross profit and operating income. Without further information, you might conclude that the company was able to purchase its inventory at a lower cost in the second year and that profits will continue to increase in future years. However, changing inventory costing methods could have caused this one-time change, in which case future profits will not be affected. Therefore, companies must be consistent in the accounting methods they use. If changes are made in accounting methods, these changes must be reported. Investors and creditors need this information to make wise decisions about the company.

Consistency Principle
A business should use the same accounting methods and procedures from period to period.

Disclosure Principle

The **disclosure principle** holds that a company should report enough information for outsiders to make knowledgeable decisions about the company. In short, the company should report information that is relevant and has faithful representation. This includes

Disclosure Principle
A business's financial statements must report enough information for outsiders to make knowledgeable decisions about the company.

disclosing the method used to account for merchandise inventories. All major accounting methods and procedures are described in the footnotes to the financial statements. Suppose a banker is comparing two companies—one using inventory method A and the other using inventory method B. The B company reports higher net income but only because of the inventory method it selected. Without knowledge of these accounting methods, the banker could lend money to the wrong business.

> Take a look at Appendix A, which contains the Green Mountain Coffee Roasters, Inc. annual report. After the financial statements, you will find the notes to the financial statements. These footnotes contain important information summarizing the accounting policies that Green Mountain uses and ensure that the company is providing full disclosure to its investors and creditors.

Materiality Concept

Materiality Concept
A company must perform strictly proper accounting only for items that are significant to the business's financial situation.

The **materiality concept** states that a company must perform strictly proper accounting *only* for significant items. Information is significant—or, in accounting terms, *material*—when it would cause someone to change a decision. The materiality concept frees accountants from having to report every last item in strict accordance with GAAP. For example, $10,000 is material to a small business with annual sales of $100,000. However, $10,000 isn't material to a large company with annual sales of $100,000,000. Therefore, the accounting principles followed for a $10,000 cost in a small company may be different from the accounting principles followed for a $10,000 cost in a large company.

Conservatism

Conservatism
A business should report the least favorable figures in the financial statements when two or more possible options are presented.

Conservatism in accounting means exercising caution in reporting items in the financial statements. Conservatism espouses the following ideas:

- Anticipate no gains, but provide for all probable losses.
- If in doubt, record an asset at the lowest reasonable amount and a liability at the highest reasonable amount.
- When there's a question, record an expense rather than an asset.
- When you are faced with a decision between two possible options, you must choose the option that undervalues, rather than overvalues, your business.

The goal of conservatism is to report realistic figures and never overstate assets or net income.

Control Over Merchandise Inventory

Maintaining good controls over merchandise inventory is very important for a merchandiser. Good controls ensure that inventory purchases and sales are properly authorized and accounted for by the accounting system. This can be accomplished by taking the following measures:

- Ensure merchandise inventory is not purchased without proper authorization, including purchasing only from approved vendors and within acceptable dollar ranges.
- After inventory is purchased, the order should be tracked and properly documented when received. At time of delivery, a count of inventory received should be completed and each item should be examined for damage.
- Damaged inventory should be properly recorded and then should either be used, disposed of, or returned to the vendor.

- A physical count of inventory should be completed at least once a year to track inventory shrinkage due to theft, damage, and errors.
- When sales are made, the inventory sold should be properly recorded and removed from the inventory count. This will prevent the company from running out of inventory, often called a stockout.

Try It!

Match the accounting terminology to the definitions.

1. Conservatism
2. Materiality concept
3. Disclosure principle
4. Consistency principle

a. A business should report the least favorable figures in the financial statements when two or more possible options are presented.

b. A business's financial statements must report enough information for outsiders to make knowledgeable decisions about the company.

c. A business should use the same accounting methods and procedures from period to period.

d. A company must perform strictly proper accounting only for items that are significant to the business's financial situation.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S6-1. MyAccountingLab

HOW ARE MERCHANDISE INVENTORY COSTS DETERMINED UNDER A PERPETUAL INVENTORY SYSTEM?

Learning Objective 2
Account for merchandise inventory costs under a perpetual inventory system

Previously you learned about merchandise inventory and cost of goods sold. Remember these key equations:

Ending Merchandise Inventory = Number of units *on hand* × Unit cost
Cost of Goods Sold = Number of units *sold* × Unit cost

Companies determine the number of units on hand from perpetual inventory records backed up by a physical count. Exhibit 6-1 (on the next page) gives the inventory data for TAB0503, one model of tablets that Smart Touch Learning sells.

As shown in this exhibit, Smart Touch Learning began August with 2 TAB0503s in inventory. It purchased 4 more tablets on August 5, bringing the total quantity on hand to 6 (2 + 4). On August 15, it sold 4 tablets, leaving 2 remaining on hand (6 − 4). Smart Touch Learning then purchased 12 more on August 26 and sold 10 on August 31. It had 4 TAB0503s at the end of August (2 + 12 − 10). The company sold each tablet for $500 to its customers.

Exhibit 6-1 | **Perpetual Inventory Record**

Item: TAB0503

Date	Quantity Purchased	Quantity Sold	Cost per Unit	Quantity on Hand
Aug. 1			$350	2
5	4		$350	6 ← 2 + 4
15		4		2 ← 6 – 4
26	12		$350	14
31		10		4
Totals	16	14		4

Measuring inventory cost is easy when prices do not change. For example, looking at Exhibit 6-1, you can see that Smart Touch Learning's cost per unit remained the same at $350. Therefore ending inventory and cost of goods sold can be calculated easily.

Ending Merchandise Inventory = Number of units *on hand* × Unit cost
= 4 units × $350 per unit
= $1,400
Cost of Goods Sold = Number of units *sold* × Unit cost
= 14 units × $350 per unit
= $4,900

But what if unit cost does change? For example, what if the cost per unit increased to $360 on August 5 and $380 on August 26, as shown in Exhibit 6-2? When inventory is sold on August 31, how many of the tablets sold cost $350? How many cost $360? And how many cost $380? To compute ending inventory and cost of goods sold, Smart Touch Learning must assign a unit cost to each inventory item. This is done by using one of four inventory costing methods: **1.** Specific identification **2.** First-in, first-out (FIFO) **3.** Last-in, first-out (LIFO) **4.** Weighted-average

Exhibit 6-2 | **Perpetual Inventory Record—Changes in Cost per Unit**

Item: TAB0503

Date	Quantity Purchased	Quantity Sold	Cost per Unit	Quantity on Hand
Aug. 1			$350	2
5	4		$360	6
15		4		2
26	12		$380	14
31		10		4
Totals	16	14		4

Each **inventory costing method** approximates the flow of inventory costs in a business (with the exception of the specific identification method) and is used to determine the amount of cost of goods sold and ending merchandise inventory.

Inventory Costing Method
A method of approximating the flow of inventory costs in a business that is used to determine the amount of cost of goods sold and ending merchandise inventory.

Specific Identification Method

The **specific identification method** uses the specific cost of each unit of inventory to determine ending inventory and cost of goods sold. In the specific identification method, the company knows exactly which item was sold and exactly what the item cost. This costing method is best for businesses that sell unique, easily identified inventory items, such as automobiles (identified by the vehicle identification number [VIN]), jewels (a specific diamond ring), and real estate (identified by address). For instance, assume that of the 4 tablets sold on August 15, 1 had a cost of $350 and 3 had a cost of $360. As for the August 31 sale, 1 had a cost of $350 and 9 had a cost of $380. Cost of goods sold and ending merchandise inventory can be calculated as shown in Exhibit 6-3.

Specific Identification Method
An inventory costing method based on the specific cost of particular units of inventory.

Exhibit 6-3 **Perpetual Inventory Record: Specific Identification**

	Purchases			Cost of Goods Sold			Inventory on Hand		
Date	**Quantity**	**Unit Cost**	**Total Cost**	**Quantity**	**Unit Cost**	**Total Cost**	**Quantity**	**Unit Cost**	**Total Cost**
Aug. 1							2 units	× $ 350	= $ 700 $ 700
5	4 units	× $ 360	= $ 1,440				2 units 4 units	× $ 350 × $ 360	= $ 700 = $ 1,440 $ 2,140
15				1 unit 3 units	× $ 350 × $ 360	= $ 350 = $ 1,080 $ 1,430	1 unit 1 unit	× $ 350 × $ 360	= $ 350 = $ 360 $ 710
26	12 units	× $ 380	= $ 4,560				1 unit 1 unit 12 units	× $ 350 × $ 360 × $ 380	= $ 350 = $ 360 = $ 4,560 $ 5,270
31				1 unit 9 units	× $ 350 × $ 380	= $ 350 = $ 3,420 $ 3,770	1 unit 3 units	× $ 360 × $ 380	= $ 360 = $ 1,140 $ 1,500
Totals	16 units		$ 6,000	14 units		$ 5,200	4 units		$ 1,500

Notice that under the specific identification method, when inventory is sold, a specific cost is assigned to it. For example, on the August 15 sale, Smart Touch Learning knew that it had sold 1 unit costing $350 and 3 units costing $360. This left 1 unit (2 − 1) at $350 and 1 unit (4 − 3) at $360 in ending inventory. This method requires the business to keep detailed records of inventory sales and purchases and to also be able to carefully identify the inventory that is sold.

First-In, First-Out (FIFO) Method

First-In, First-Out (FIFO) Method An inventory costing method in which the first costs into inventory are the first costs out to cost of goods sold. Ending inventory is based on the costs of the most recent purchases.

Under the **first-in, first-out (FIFO) method**, the cost of goods sold is based on the oldest purchases—that is, the first units to come in are assumed to be the first units to go out (sold). In Exhibit 6-4, this is illustrated by the cost of goods sold coming from the *first* goods purchased, which are from the August 1 beginning inventory. FIFO costing is consistent with the physical movement of inventory (for most companies). That is, under the FIFO inventory costing method, companies sell their oldest inventory first.

Exhibit 6-4 **Perpetual Inventory Record: First-In, First-Out (FIFO)**

	Purchases			Cost of Goods Sold				Inventory on Hand			
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost		Quantity	Unit Cost	Total Cost	
Aug. 1								2 units	× $ 350	= $ 700	$ 700
5	4 units	× $ 360	= $ 1,440					2 units 4 units	× $ 350 × $ 360	= $ 700 = $ 1,440	$ 2,140
15				2 units 2 units	× $ 350 × $ 360	= $ 700 = $ 720	$ 1,420	2 units	× $ 360	= $ 720	$ 720
26	12 units	× $ 380	= $ 4,560					2 units 12 units	× $ 360 × $ 380	= $ 720 = $ 4,560	$ 5,280
31				2 units 8 units	× $ 360 × $ 380	= $ 720 = $ 3,040	$ 3,760	4 units	× $ 380	= $ 1,520	$ 1,520
Totals	16 units		$ 6,000	14 units			$ 5,180	4 units			$ 1,520

Smart Touch Learning began August with 2 TAB0503s that cost $350 each. After the August 5 purchase, the inventory on hand consists of 6 units (2 + 4). On August 15, the company sold 4 units. Under FIFO, the first 2 units sold had the oldest cost ($350 per unit). The next 2 units sold cost $360 each. That leaves 2 units in inventory on August 15 at $360 each. The remainder of the inventory record follows the same pattern. Consider the sale on August 31 of 10 units. The oldest cost is from August 5 (2 units @ $360). The next oldest cost is from the August 26 purchase at $380 each (8 units @ $380). This leaves 4 units in inventory on August 31 at $380 each.

The FIFO monthly summary at August 31 is as follows:

- Cost of goods sold: 14 units that cost a total of $5,180.
- Ending inventory: 4 units that cost a total of $1,520.

Cost of Goods Available for Sale The total cost spent on inventory that was available to be sold during a period.

Notice the total cost of goods sold of $5,180 plus the total ending inventory of $1,520 equals the total **cost of goods available for sale** during August of $6,700 [(2 units @ $350) + (4 units @ $360) + (12 units @ $380)]. Cost of goods available for sale represents the total cost of merchandise inventory that is available for sale during the time period. Smart Touch Learning measures cost of goods sold and ending merchandise inventory in this manner to prepare its financial statements.

Journal Entries Under FIFO

The journal entries under FIFO are presented below. We assume all purchases and sales of inventory are on account. The amounts unique to FIFO are shown in blue for emphasis. All other amounts are the same for all four inventory methods.

Date	Accounts and Explanation	Debit	Credit
Aug. 5	Merchandise Inventory (4 × $360)	1,440	
	Accounts Payable		1,440
	Purchased inventory on account.		
15	Accounts Receivable (4 × $500)	2,000	
	Sales Revenue		2,000
	Sale on account.		
15	Cost of Goods Sold (2 × $350) + (2 × $360)	1,420	
	Merchandise Inventory		1,420
	Recorded the cost of goods sold.		
26	Merchandise Inventory (12 × $380)	4,560	
	Accounts Payable		4,560
	Purchased inventory on account.		
31	Accounts Receivable (10 × $500)	5,000	
	Sales Revenue		5,000
	Sale on account.		
31	Cost of Goods Sold (2 × $360) + (8 × $380)	3,760	
	Merchandise Inventory		3,760
	Recorded the cost of goods sold.		

A↑ Merchandise Inventory↑ = **L↑** Accounts Payable↑ + **E**

A↑ Accounts Receivable↑ = **L** + **E↑** Sales Revenue↑

A↓ Merchandise Inventory↓ = **L** + **E↓** Cost of Goods Sold↑

A↑ Merchandise Inventory↑ = **L↑** Accounts Payable↑ + **E**

A↑ Accounts Receivable↑ = **L** + **E↑** Sales Revenue↑

A↓ Merchandise Inventory↓ = **L** + **E↓** Cost of Goods Sold↑

For example, on August 5, Smart Touch Learning purchased $1,440 of inventory and made the first journal entry. On August 15, the company sold 4 TAB0503s for the sale price of $500 each. Smart Touch Learning recorded the sale, $2,000, and the cost of goods sold, $1,420 (calculated in Exhibit 6-4 as 2 units @ $350 plus 2 units @ $360). The remaining journal entries (August 26 and 31) follow the inventory data in Exhibit 6-4.

Last-In, First-Out (LIFO) Method

Last-in, first-out (LIFO) is the opposite of FIFO. Under the **last-in, first-out (LIFO) method**, ending inventory comes from the oldest costs (beginning inventory and earliest purchases) of the period. The cost of goods sold is based on the most recent purchases (new

Last-In, First-Out (LIFO) Method
An inventory costing method in which the last costs into inventory are the first costs out to cost of goods sold. The method leaves the oldest costs—those of beginning inventory and the earliest purchases of the period—in ending inventory.

costs)—that is, the last units in are assumed to be the first units sold. This is illustrated by the cost of goods sold for the August 31 sale coming from the *last* goods in the warehouse—the August 26 purchase in Exhibit 6-5. Under the LIFO inventory costing method, companies sell their newest inventory first.

Exhibit 6-5 | **Perpetual Inventory Record: Last-In, First-Out (LIFO)**

	Purchases			Cost of Goods Sold			Inventory on Hand		
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Aug. 1							2 units	× $ 350	= $ 700 $ 700
5	4 units	× $ 360	= $ 1,440				2 units 4 units	× $ 350 × $ 360	= $ 700 = $ 1,440 $ 2,140
15				4 units	× $ 360	= $ 1,440 $ 1,440	2 units	× $ 350	= $ 700 $ 700
26	12 units	× $ 380	= $ 4,560				2 units 12 units	× $ 350 × $ 380	= $ 700 = $ 4,560 $ 5,260
31				10 units	× $ 380	= $ 3,800 $ 3,800	2 units 2 units	× $ 350 × $ 380	= $ 700 = $ 760 $ 1,460
Totals	16 units		$ 6,000	14 units		$ 5,240	4 units		$ 1,460

LIFO is not permitted under International Financial Reporting Standards (IFRS). Under IFRS, companies may only use the specific identification, FIFO, and weighted-average methods to cost inventory. If LIFO were eliminated as an acceptable method under GAAP, those U.S. companies currently using the LIFO cost method would experience significant income statement and balance sheet effects. Approximately one-third of U.S. companies use the LIFO method to cost at least part of their inventory.

Again, Smart Touch Learning had 2 TAB0503s at the beginning. After the purchase on August 5, the company holds 6 units of inventory (2 units @ $350 plus 4 units @ $360). On August 15, Smart Touch Learning sells 4 units. Under LIFO, the cost of goods sold always comes from the most recent purchase (4 units @ $360). That leaves 2 TAB0503s in inventory on August 15 (2 units @ $350).

The purchase of 12 units on August 26 adds a new $380 layer to inventory. Now inventory holds 14 units.

Then the sale of 10 units on August 31 peels back units in LIFO order (10 units @ $380). The LIFO monthly summary at August 31 is as follows:

- Cost of goods sold: 14 units that cost a total of $5,240.
- Ending inventory: 4 units that cost a total of $1,460.

Under LIFO, Smart Touch Learning could measure cost of goods sold and ending inventory in this manner to prepare its financial statements.

Journal Entries Under LIFO

The journal entries under LIFO follow. We assume all purchases and sales of inventory are on account. Amounts unique to LIFO are shown in blue.

Date	Accounts and Explanation	Debit	Credit
Aug. 5	Merchandise Inventory (4 × $360)	1,440	
	Accounts Payable		1,440
	Purchased inventory on account.		
15	Accounts Receivable (4 × $500)	2,000	
	Sales Revenue		2,000
	Sale on account.		
15	Cost of Goods Sold (4 × $360)	1,440	
	Merchandise Inventory		1,440
	Recorded the cost of goods sold.		
26	Merchandise Inventory (12 × $380)	4,560	
	Accounts Payable		4,560
	Purchased inventory on account.		
31	Accounts Receivable (10 × $500)	5,000	
	Sales Revenue		5,000
	Sale on account.		
31	Cost of Goods Sold (10 × $380)	3,800	
	Merchandise Inventory		3,800
	Recorded the cost of goods sold.		

A↑	=	**L↑**	+	**E**
Merchandise Inventory↑		Accounts Payable↑		
A↑	=	**L**	+	**E↑**
Accounts Receivable↑				Sales Revenue↑
A↓	=	**L**	+	**E↓**
Merchandise Inventory↓				Cost of Goods Sold↑
A↑	=	**L↑**	+	**E**
Merchandise Inventory↑		Accounts Payable↑		
A↑	=	**L**	+	**E↑**
Accounts Receivable↑				Sales Revenue↑
A↓	=	**L**	+	**E↓**
Merchandise Inventory↓				Cost of Goods Sold↑

On August 5, Smart Touch Learning purchased inventory of $1,440. The August 15 sale brought in sales revenue (4 units @ $500 = $2,000) and cost of goods sold (4 units @ $360 = $1,440). The August 26 and 31 entries also come from the data in Exhibit 6-5.

Think about going to the grocery store to buy a gallon of milk. Which gallon is in front of the milk cooler: the older milk or the newer milk? The older milk is in front. That's FIFO. Now visualize reaching all the way to the back of the cooler to get the newer milk. That's LIFO. It's important to understand that although this image represents the physical flow of goods, an inventory costing system may or may not match the physical flow. The costing system is only an assumption about how costs flow. The inventory does not have to actually be sold in the FIFO manner in order to record it as FIFO.

Weighted-Average Method

Under the **weighted-average method**, the business computes a new weighted-average cost per unit after each purchase. Ending inventory and cost of goods sold are then based on the same weighted-average cost per unit. After the first purchase on August 5, the weighted-average cost

Weighted-Average Method
An inventory costing method based on the weighted-average cost per unit of inventory that is calculated after each purchase. Weighted-average cost per unit is determined by dividing the cost of goods available for sale by the number of units available.

per unit sold falls somewhere between the beginning inventory cost of $350 and the most recent purchase cost of $360.

Exhibit 6-6 shows a perpetual inventory record for the weighted-average method. We round average unit cost to the nearest cent and total cost to the nearest dollar.

Exhibit 6-6 | **Perpetual Inventory Record: Weighted-Average**

	Purchases			Cost of Goods Sold			Inventory on Hand		
Date	**Quantity**	**Unit Cost**	**Total Cost**	**Quantity**	**Unit Cost**	**Total Cost**	**Quantity**	**Unit Cost**	**Total Cost**
Aug. 1							2 units	× $ 350	= $ 700
5	4 units	× $ 360	= $ 1,440				6 units	× $ 356.67	= $ 2,140 $ 2,140 / 6 units = $ 356.67
15				4 units	× $ 356.67	= $ 1,427	2 units	× $ 356.67	= $ 713
26	12 units	× $ 380	= $ 4,560				14 units	× $ 376.64	= $ 5,273 $ 5,273 / 14 units = $ 376.64
31				10 units	× $ 376.64	= $ 3,766	4 units	× $ 376.64	= $ 1,507
Totals	16 units		$ 6,000	14 units		$ 5,193	4 units		$ 1,507

As noted previously, after each purchase, Smart Touch Learning computes a new weighted-average cost per unit. For example, on August 5, the new weighted-average unit cost is as follows:

Cost of goods available for sale / Number of units available = ($700 + $1,440) / (2 units + 4 units)
= $2,140 / 6 units
= $356.67 (rounded)

Under the weighted-average method, the cost per unit is a *weighted* average. You cannot take the average of the two unit costs ($350 and $360) to determine the new unit cost. Instead, you must use the total cost of goods available for sale ($2,140) divided by the number of units available (6 units).

The goods sold on August 15 are then costed out at $356.67 per unit. On August 26 when the next purchase is made, the new weighted-average unit cost is as follows:

Cost of goods available for sale / Number of units available = ($713 + $4,560) / (2 units + 12 units)
= $5,273 / 14 units
= $376.64 (rounded)

The weighted-average cost summary at August 31 is as follows:

- Cost of goods sold: 14 units that cost a total of $5,193.
- Ending inventory: 4 units that cost a total of $1,507.

With the weighted-average cost method, rounding errors can occur. However, this is not the case in this example. Notice that cost of goods sold and ending inventory total $6,700 ($5,193 + $1,507), which equals the total cost of goods available for sale.

Under the weighted-average cost method, Smart Touch Learning could use these amounts to prepare its financial statements.

Journal Entries Under Weighted-Average

The journal entries under weighted-average costing follow. We assume all purchases and sales of inventory are on account. Amounts unique to the weighted-average method are shown in blue.

Date	Accounts and Explanation	Debit	Credit
Aug. 5	Merchandise Inventory (4 × $360)	1,440	
	Accounts Payable		1,440
	Purchased inventory on account.		
15	Accounts Receivable (4 × $500)	2,000	
	Sales Revenue		2,000
	Sale on account.		
15	Cost of Goods Sold (4 × $356.67)	1,427	
	Merchandise Inventory		1,427
	Recorded the cost of goods sold.		
26	Merchandise Inventory (12 × $380)	4,560	
	Accounts Payable		4,560
	Purchased inventory on account.		
31	Accounts Receivable (10 × $500)	5,000	
	Sales Revenue		5,000
	Sale on account.		
31	Cost of Goods Sold (10 × $376.64)	3,766	
	Merchandise Inventory		3,766
	Recorded the cost of goods sold.		

A↑ Merchandise Inventory↑ = **L↑** Accounts Payable↑ + **E**

A↑ Accounts Receivable↑ = **L** + **E↑** Sales Revenue↑

A↓ Merchandise Inventory↓ = **L** + **E↓** Cost of Goods Sold↑

A↑ Merchandise Inventory↑ = **L↑** Accounts Payable↑ + **E**

A↑ Accounts Receivable↑ = **L** + **E↑** Sales Revenue↑

A↓ Merchandise Inventory↓ = **L** + **E↓** Cost of Goods Sold↑

On August 5, Smart Touch Learning purchased $1,440 of inventory and made the first journal entry. On August 15, Smart Touch Learning sold 4 TAB0503s for $500 each. The company recorded the sale ($2,000) and the cost of goods sold (4 units at $356.67 = $1,427). The remaining journal entries (August 26 and 31) follow the same procedure.

Try It!

5. Serenity Books has the following transactions in August related to merchandise inventory.

Aug. 1	Beginning merchandise inventory, 10 books @ $15 each
3	Sold 3 books @ $20 each
12	Purchased 8 books @ $18 each
15	Sold 9 books @ $20 each
20	Purchased 4 books @ $20 each
28	Sold 5 books @ $25 each

a. Determine the cost of goods sold and ending merchandise inventory by preparing a perpetual inventory record using the specific identification method. Assume the following costing information for the books sold during the month:

August 3: 3 books costing $15 each
August 15: 4 books costing $15 each and 5 books costing $18 each
August 28: 2 books costing $18 each and 3 books costing $20 each

b. Determine the cost of goods sold and ending merchandise inventory by preparing a perpetual inventory record using the FIFO inventory costing method.

c. Determine the cost of goods sold and ending merchandise inventory by preparing a perpetual inventory record using the LIFO inventory costing method.

d. Determine the cost of goods sold and ending merchandise inventory by preparing a perpetual inventory record using the weighted-average inventory costing method. Round weighted-average unit cost to the nearest cent and total cost to the nearest dollar.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S6-2 through S6-6. MyAccountingLab

HOW ARE FINANCIAL STATEMENTS AFFECTED BY USING DIFFERENT INVENTORY COSTING METHODS?

Learning Objective 3
Compare the effects on the financial statements when using the different inventory costing methods

What leads Smart Touch Learning to select the specific identification, FIFO, LIFO, or weighted-average inventory costing method? The different methods have different benefits.

Income Statement

Exhibit 6-7 summarizes the results for the four inventory costing methods for Smart Touch Learning. It shows sales revenue, cost of goods sold, and gross profit for specific identification, FIFO, LIFO, and weighted-average.

Exhibit 6-7 shows that FIFO produces the lowest cost of goods sold and the highest gross profit for Smart Touch Learning. Because operating expenses are the same, regardless of which inventory method a company uses, net income is also the highest under

Exhibit 6-7 **Comparative Results for Specific Identification, FIFO, LIFO, and Weighted-Average—Income Statement**

	Specific Identification	FIFO	LIFO	Weighted-Average
Sales Revenue (14 units × $500)	$ 7,000	$ 7,000	$ 7,000	$ 7,000
Less: Cost of Goods Sold	5,200	5,180	5,240	5,193
Gross Profit	$ 1,800	$ 1,820	$ 1,760	$ 1,807

FIFO when inventory costs are rising. **Many companies prefer high income in order to attract investors and borrow on favorable terms. FIFO offers this benefit in a period of rising costs.**

When inventory costs are rising, LIFO results in the highest cost of goods sold and the lowest gross profit. **Lower profits mean lower taxable income; thus, LIFO lets companies pay the lowest income taxes when inventory costs are rising.** Low tax payments conserve cash, and that is the main benefit of LIFO. The downside of LIFO is that the company reports lower net income.

The weighted-average method generates amounts that fall between the extremes of FIFO and LIFO. **Therefore, companies that seek a "middle-ground" solution use the weighted-average method for inventory.**

How do businesses decide which inventory costing method to use?

Balance Sheet

Consider again the purchases made by Smart Touch Learning during August. The company had total inventory in August as follows:

Aug. 1	2 units × $350	$ 700
Aug. 5	4 units × $360	1,440
Aug. 26	12 units × $380	4,560
Cost of goods available for sale		$ 6,700

Only one of two things can happen to the tablets—either they remain in the warehouse (ending merchandise inventory) or they are sold (Cost of Goods Sold). Ending merchandise inventory can be calculated by determining first the cost of goods available for sale (beginning merchandise inventory plus inventory purchased) and then subtracting merchandise inventory sold (Cost of Goods Sold). Exhibit 6-8 (on the next page) shows the results of Smart Touch Learning's ending merchandise inventory for each of the costing methods for August.

When using the FIFO inventory costing method, ending merchandise inventory will be the highest when costs are increasing. LIFO produces the lowest ending merchandise inventory with weighted-average again in the middle.

So far, we have been ignoring the effects on the income statement and balance sheet when using the specific identification method. This is because under specific identification, the results will vary depending on which costs are assigned to the inventory sold. Most companies will not choose to use the specific identification method unless they want to match each inventory item sold with its exact cost.

Exhibit 6-8 Comparative Results for Specific Identification, FIFO, LIFO, and Weighted-Average—Balance Sheet

	Specific Identification	FIFO	LIFO	Weighted-Average
Beginning Merchandise Inventory	$ 700	$ 700	$ 700	$ 700
Plus: Net Cost of Purchases	6,000	6,000	6,000	6,000
Cost of Goods Available for Sale	6,700	6,700	6,700	6,700
Less: Cost of Goods Sold	5,200	5,180	5,240	5,193
Ending Merchandise Inventory	$ 1,500	$ 1,520	$ 1,460	$ 1,507

The weighted-average ending merchandise inventory number shown in Exhibit 6-6 may be slightly different than that found in Exhibit 6-8. This is because of rounding. When completing your homework, always read carefully for directions on how to round when using the weighted-average method.

We have looked at the effects on the financial statements when inventory costs are rising. When inventory costs are instead declining, the effects on the financial statements will be the opposite of those discussed above. Exhibit 6-9 summarizes the effects on the financial statements during periods of rising and declining inventory costs.

Exhibit 6-9 Effects on the Financial Statements During Periods of Rising and Declining Inventory Costs

Period of Rising Inventory Costs:

	Specific Identification	FIFO	LIFO	Weighted-Average
Income Statement:				
Cost of Goods Sold	Varies	Lowest	Highest	Middle
Net Income	Varies	Highest	Lowest	Middle
Balance Sheet:				
Ending Merchandise Inventory	Varies	Highest	Lowest	Middle

Period of Declining Inventory Costs:

	Specific Identification	FIFO	LIFO	Weighted-Average
Income Statement:				
Cost of Goods Sold	Varies	Highest	Lowest	Middle
Net Income	Varies	Lowest	Highest	Middle
Balance Sheet:				
Ending Merchandise Inventory	Varies	Lowest	Highest	Middle

Try It!

6. Antelope Motors is considering which inventory costing method it should use. The business wants to maximize gross profits during a period of declining costs. Which inventory costing method should Antelope Motors select?

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S6-7. MyAccountingLab

HOW IS MERCHANDISE INVENTORY VALUED WHEN USING THE LOWER-OF-COST-OR-MARKET RULE?

Learning Objective 4

Apply the lower-of-cost-or-market rule to merchandise inventory

In addition to the specific identification, FIFO, LIFO, and weighted-average inventory costing methods, accountants face other inventory issues, such as the **lower-of-cost-or-market (LCM) rule**. LCM shows accounting conservatism in action and requires that merchandise inventory be reported in the financial statements at whichever is lower of the following:

- The historical cost of the inventory
- The market value of the inventory

Lower-of-Cost-or-Market (LCM) Rule

Rule that merchandise inventory should be reported in the financial statements at whichever is lower—its historical cost or its market value.

Computing the Lower-of-Cost-or-Market

For inventories, market value generally means the current replacement cost (that is, the cost to replace the inventory on hand). If the replacement cost of inventory is less than its historical cost, the business must adjust the inventory value. By adjusting the inventory down (crediting Merchandise Inventory), the balance sheet value of the asset, Merchandise Inventory, is at its correct value (market) rather than its overstated value (cost). If the merchandise inventory's market value is greater than cost, then we don't adjust the Merchandise Inventory account because of the conservatism principle.

IFRS

Under International Financial Reporting Standards, inventory must be reported at the lower-of-cost-or-market value. However, "market" is defined differently. Under IFRS, the market value of inventory is defined as the "net realizable value," or essentially its selling price. (What will the company "really" get for its inventory?) If the historical cost is higher than the selling price, then inventory must be written down. The IFRS approach results in fewer write-downs on inventory. In some circumstances, if a write-down is necessary, it may be reversed at a later date. Reversing write-downs of inventory never happens under GAAP.

Recording the Adjusting Journal Entry to Adjust Merchandise Inventory

Suppose Smart Touch Learning paid $3,000 for its TAB0503 inventory. By December 31, the merchandise inventory can now be replaced for $2,200, and the decline in value appears permanent. Market value is below cost, and the entry to write down the inventory to LCM is as follows:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Cost of Goods Sold	800	
	Merchandise Inventory ($3,000 − $2,200)		800
	To write merchandise inventory down to market value.		

A↓	=	L	+	E↓
Merchandise Inventory↓				Cost of Goods Sold↑

In this case, Smart Touch Learning's balance sheet would report this inventory as follows:

SMART TOUCH LEARNING
Balance Sheet (Partial)
December 31, 2017

Current Assets:	
Merchandise Inventory	$ 2,200

Companies often disclose that the LCM rule is followed in notes to their financial statements, as shown here for Smart Touch Learning:

> NOTE 2: STATEMENT OF SIGNIFICANT ACCOUNTING POLICIES
> *Merchandise Inventories*. Merchandise inventories are carried at the *lower-of-cost-or-market*. Cost is determined using the first-in, first-out method.

DECISIONS

Should inventory be marked down?

Haley Richardson works for a large retail electronic store, Electronics 'R Us, and is responsible for handling all aspects of merchandise inventory. Earlier in the year, the store had purchased large quantities of the newest laptop computer, counting on the fact that consumers would be rushing into the store to buy them. What Electronics 'R Us didn't know was that the laptops would become obsolete before they were sold. Now, as Haley stares at the laptops sitting on the shelf, she wonders what she should do. What would you do?

Solution

Generally Accepted Accounting Principles require that companies evaluate the cost of inventory annually to determine whether the current market value is less than the cost of the inventory on the balance sheet. Haley should review the business's stock of laptops and determine the market value. It's important that Haley realize that market value does not mean the value at which the laptops can be sold. Instead, market value represents the current replacement cost or the cost that Electronics 'R Us would incur to replace the laptops on hand. If the replacement cost is less than the historical cost of the laptops, then Haley should record an entry to write down the value of the laptops. This ensures that Electronics 'R Us is not overstating the value of the laptops on its balance sheet.

Try It!

7. T. J. Jackson Supplies had merchandise inventory that cost $1,300. The market value of the merchandise inventory is $750. What value should Jackson Supplies show on the balance sheet for merchandise inventory? Record the adjusting entry, if one is needed.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S6-8. MyAccountingLab

WHAT ARE THE EFFECTS OF MERCHANDISE INVENTORY ERRORS ON THE FINANCIAL STATEMENTS?

Learning Objective 5

Measure the effects of merchandise inventory errors on the financial statements

Businesses perform a physical count of their merchandise inventory at the end of the accounting period. For the financial statements to be accurate, it is important to get a correct count. This can be difficult for a company with widespread operations.

An error in ending merchandise inventory creates a whole string of errors in other related accounts. To illustrate, suppose Smart Touch Learning accidentally reported $5,000 more ending merchandise inventory than it actually had. In that case, ending merchandise inventory would be overstated by $5,000 on the balance sheet. The following shows how an overstatement of ending inventory affects cost of goods sold, gross profit, and net income:

	Ending Merchandise Inventory **Overstated $5,000**
Sales Revenue	Correct
Cost of Goods Sold:	
Beginning Merchandise Inventory	Correct
Net Cost of Purchases	Correct
Cost of Goods Available for Sale	Correct
Less: Ending Merchandise Inventory	ERROR: Overstated $5,000
Cost of Goods Sold	Understated $5,000
Gross Profit	Overstated $5,000
Operating Expenses	Correct
Net Income	Overstated $5,000

Understating the ending inventory—reporting the inventory too low—has the opposite effect. If Smart Touch Learning understated the inventory by $1,200, the effect would be as shown here:

	Ending Merchandise Inventory **Understated $1,200**
Sales Revenue	Correct
Cost of Goods Sold:	
Beginning Merchandise Inventory	Correct
Net Cost of Purchases	Correct
Cost of Goods Available for Sale	Correct
Less: Ending Merchandise Inventory	ERROR: Understated $1,200
Cost of Goods Sold	Overstated $1,200
Gross Profit	Understated $1,200
Operating Expenses	Correct
Net Income	Understated $1,200

Recall that one period's ending merchandise inventory becomes the next period's beginning inventory. As a result, an error in ending merchandise inventory carries over into the next period. Exhibit 6-10 (on the next page) illustrates the effect of an inventory error, assuming all other items on the income statement are unchanged for the three periods. Period 1's ending merchandise inventory is overstated by $5,000; Period 1's ending merchandise inventory should be $10,000. The error carries over to Period 2. Period 3 is correct. In fact, both Period 1 and Period 2 should look like Period 3.

Exhibit 6-10 | **Inventory Errors**

SAMPLE COMPANY
Income Statement
For the Years Ended Periods 1, 2, and 3

	Period 1		**Period 2**		**Period 3**	
	***Ending* Merchandise Inventory Overstated by $5,000**		***Beginning* Merchandise Inventory Overstated by $5,000**		**Correct**	
Sales Revenue		$ 100,000		$ 100,000		$ 100,000
Cost of Goods Sold:						
Beginning Merchandise Inventory	$ 10,000		$ 15,000		$ 10,000	
Net Cost of Purchases	50,000		50,000		50,000	
Cost of Goods Available for Sale	60,000		65,000		60,000	
Less: Ending Merchandise Inventory	15,000		10,000		10,000	
Cost of Goods Sold		45,000		55,000		50,000
Gross Profit		$ 55,000		$ 45,000		$ 50,000
The correct gross profit is $50,000 for each period.	$100,000					

Ending merchandise inventory is *subtracted* to compute cost of goods sold in one period and the same amount is *added* as beginning merchandise inventory in the next period. Therefore, an inventory error cancels out after two periods. The overstatement of cost of goods sold in Period 2 counterbalances the understatement for Period 1. Thus, total gross profit for the two periods combined is correct. The effects of inventory errors are summarized in Exhibit 6-11.

Exhibit 6-11 | **Effects of Inventory Errors**

SAMPLE COMPANY
Income Statement
For the Years Ended Periods 1 and 2

	Period 1		**Period 2**	
	Cost of Goods Sold	**Gross Profit and Net Income**	**Cost of Goods Sold**	**Gross Profit and Net Income**
Period 1 Ending Merchandise Inventory *overstated*	Understated	Overstated	Overstated	Understated
Period 1 Ending Merchandise Inventory *understated*	Overstated	Understated	Understated	Overstated

ETHICS

Should the inventory be included?

One of A'isha Sowell's main responsibilities at the end of the accounting period is to supervise the count of physical inventory for her employer. She knows that it is important that the business get an accurate count of inventory so that its financial statements are reported correctly. In reviewing the inventory count sheet, she realizes that a large crate of inventory that has already been sold but not yet delivered was included in the count of inventory. The crate has left her employer but is still in transit at fiscal year-end. A'isha does not believe that it should be included because the inventory was sold FOB shipping point. When A'isha went to her supervisor with this information, she was told that she shouldn't worry about it because the error would ultimately correct itself. What should A'isha do?

Solution

Companies whose profits are lagging can be tempted to increase reported income to make the business look more successful. One easy way to do this is to overstate ending inventory. A'isha is correct in her assumption that the inventory should not be included in the physical count of inventory. While this error will ultimately correct itself (in two years), in the current year, the business will be overstating gross profit and net income. This overstatement could cause investors to view the business more favorably than they should. A'isha should stand firm in her decision to not include the inventory in the count.

Try It!

8. The Shirley's Gourmet Foods' merchandise inventory data for the year ended December 31, 2016, follow:

Sales Revenue		$ 48,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 3,360	
Net Cost of Purchases	21,280	
Cost of Goods Available for Sale	24,640	
Less: Ending Merchandise Inventory	4,960	
Cost of Goods Sold		19,680
Gross Profit		$ 28,320

Assume that the ending merchandise inventory was accidentally overstated by $1,920. What are the correct amounts for cost of goods sold and gross profit?

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S6-9. MyAccountingLab

HOW DO WE USE INVENTORY TURNOVER AND DAYS' SALES IN INVENTORY TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 6

Use inventory turnover and days' sales in inventory to evaluate business performance

Businesses strive to sell merchandise inventory quickly because the merchandise inventory generates no profit until it is sold. Further, fast-selling inventory is less likely to become obsolete (worthless) and does not require the business to pay for high storage and insurance costs often associated with keeping inventory on hand. There are two ratios that help businesses monitor their inventory levels: inventory turnover and days' sales in inventory.

Inventory Turnover

Inventory Turnover Measures the number of times a company sells its average level of merchandise inventory during a period. Cost of goods sold / Average merchandise inventory.

Companies try to manage their inventory levels such that they will have just enough inventory to meet customer demand without investing large amounts of money in inventory sitting on the shelves gathering dust. **Inventory turnover** measures how rapidly merchandise inventory is sold. It is computed as follows:

Inventory turnover = Cost of goods sold / Average merchandise inventory
Average merchandise inventory = (Beginning merchandise inventory + Ending merchandise inventory) / 2

A high rate of turnover indicates ease in selling inventory; a low rate indicates difficulty. For example, an inventory value of 4 means that the company sold its average level of inventory four times—once every three months—during the year. Inventory turnover varies widely with the nature of the business and should be evaluated against industry averages.

Days' Sales in Inventory

Days' Sales in Inventory Measures the average number of days that inventory is held by a company. 365 days / Inventory turnover.

Another key measure is the **days' sales in inventory** ratio. This ratio measures the average number of days merchandise inventory is held by the company and is calculated as follows:

Days' sales in inventory = 365 days / Inventory turnover

Days' sales in inventory also varies widely, depending on the business. A lower days' sales in inventory is preferable because it indicates that the company is able to sell its inventory quickly, thereby reducing its inventory storage and insurance costs, as well as reducing the risk of holding obsolete inventory.

Let's return to **Green Mountain Coffee Roasters, Inc.** and evaluate the company's inventory levels using the two ratios discussed. Presented below are the cost of goods sold and beginning and ending merchandise inventory figures (in thousands) from Green Mountain's income statement for the year ended September 28, 2013 and balance sheet on September 28, 2013.

Cost of goods sold (Cost of sales)	$ 2,738,714
Beginning merchandise inventory	768,437
Ending merchandise inventory	676,089

Green Mountain's inventory turnover is 3.79 times per year and is calculated as:

Inventory turnover = Cost of goods sold / Average merchandise inventory
= $2,738,714 / [($768,437 + $676,089) / 2]
= 3.79 times per year

Its days' sales in inventory is 96.3 days and is calculated as:

Days' sales in inventory = 365 days / Inventory turnover
= 365 days / 3.79
= 96.3 days

It appears that Green Mountain sells its average inventory 3.79 times per year. A high turnover rate is desirable, and an increase in the turnover rate usually means higher profits. In addition, the days' sales in inventory of Green Mountain indicates that the company, on average, has 96.3 days' supply of inventory on hand. This seems a little high for a consumer beverage company, but it should be evaluated against the industry average.

Try It!

9. The Opa's Carving Shop had the following financial data for the year ended December 31, 2016:

Cost of Goods Sold	$ 484,000
Beginning Merchandise Inventory	88,800
Ending Merchandise Inventory	111,200

What are the inventory turnover and days' sales in inventory for the year?

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S6-10. MyAccountingLab

APPENDIX 6A: Merchandise Inventory Costs Under a Periodic Inventory System

HOW ARE MERCHANDISE INVENTORY COSTS DETERMINED UNDER A PERIODIC INVENTORY SYSTEM?

Learning Objective 7

Account for merchandise inventory costs under a periodic inventory system

We described the periodic inventory system briefly in the previous chapter. Accounting is simpler in a periodic inventory system because the company keeps no daily running record of inventory on hand. The only way to determine the ending merchandise inventory and cost of goods sold in a periodic inventory system is to take a physical inventory to count the goods left (on hand)—usually at the end of the fiscal year. The periodic inventory system works well for a small business in which the inventory can be controlled by visual inspection—that is, the inventory usually is not large in size or dollar amount.

The various inventory costing methods (specific identification, FIFO, LIFO, and weighted-average) in a periodic inventory system follow the pattern illustrated earlier for the perpetual inventory system. To show how the periodic inventory system works, we use the same Smart Touch Learning data that we used for the perpetual inventory system (see Exhibit 6A-1, on the next page).

Exhibit 6A-1 | **Perpetual Inventory Record—Changes in Cost per Unit**

Item: TAB0503

Date	Quantity Purchased	Quantity Sold	Cost per Unit	Quantity on Hand
Aug. 1			$350	2
5	4		$360	6
15		4		2
26	12		$380	14
31		10		4
Totals	16	14		4

We use these data to illustrate FIFO, LIFO, and weighted-average cost. We will not illustrate the specific identification inventory costing method because it is calculated the same under both the perpetual and periodic inventory systems.

For all four inventory costing methods, cost of goods available for sale is always the sum of beginning inventory plus net purchases:

Beginning merchandise inventory (2 units × $350)	$ 700
Plus: Net purchases (4 units × $360) + (12 units × $380)	6,000
Cost of goods available for sale	$ 6,700

The different methods—specific identification, FIFO, LIFO, and weighted-average cost—compute different amounts for ending inventory and cost of goods sold. In other words, the $6,700 invested in cost of goods available for sale will be either on the balance sheet in Merchandise Inventory or expensed on the income statement, as Cost of Goods Sold. The amount on the balance sheet will be the cost of the four tablets that were not sold and are still on hand. The amount on the income statement will be the cost of the 14 tablets sold.

First-In, First-Out (FIFO) Method

Under FIFO, the ending inventory comes from the newest—the most recent—purchases, which cost $380 per unit as illustrated below:

Beginning merchandise inventory (2 units × $350)	$ 700
Net cost of purchases (4 units × $360) + (12 units × $380)	6,000
Cost of goods available for sale	6,700
Less: Ending merchandise inventory (4 × $380)	(1,520)
Cost of goods sold	$ 5,180

Notice that the FIFO periodic cost of goods sold is $5,180, exactly the same amount as we calculated using the FIFO perpetual inventory method. The amounts obtained for cost of goods sold and ending merchandise inventory are always the same for FIFO perpetual and FIFO periodic. This occurs because FIFO sells the oldest inventory acquisitions first. Therefore, it does not matter when FIFO is calculated; the earliest purchase will always be the same whether we calculate cost of goods sold on the sale date (perpetual) or at the end of the period (periodic).

Last-In, First-Out (LIFO) Method

Under LIFO, the ending inventory comes from the oldest costs of the period—in this case, the beginning inventory of two units that cost $350 per unit, plus two from the first purchase at $360. LIFO is calculated as follows:

Beginning merchandise inventory (2 units × $350)	$ 700
Net cost purchases (4 units × $360) + (12 units × $380)	6,000
Cost of goods available for sale	6,700
Less: Ending merchandise inventory (2 × $350) + (2 × $360)	(1,420)
Cost of goods sold	$ 5,280

Weighted-Average Method

In the weighted-average inventory costing method, when using the periodic inventory system, we compute a single weighted-average cost per unit for the entire period:

Cost of goods available for sale (entire period) / Number of units available = $6,700 / 18 units*
= $372.22 (rounded)

*2 units from beginning inventory + 16 units purchased during August

Then apply this weighted-average cost to compute ending merchandise inventory (rounded to the nearest dollar) and cost of goods sold, as shown:

Beginning merchandise inventory (2 units × $350)	$ 700
Net cost of purchases (4 units × $360) + (12 units × $380)	6,000
Cost of goods available for sale	6,700
Less: Ending merchandise inventory (4 × $372.22)	(1,489)
Cost of goods sold	$ 5,211

Notice that when using the periodic system with the LIFO and weighted-average periodic methods, the dollar amounts obtained for the ending merchandise inventory and cost of goods sold are different than those obtained with the perpetual inventory system. This is because the perpetual inventory system keeps a running balance of inventory while the periodic inventory system does not. Under the periodic inventory system, the ending merchandise inventory is determined without regard to when the sales dates of inventory occurred.

Try It!

10A. Serenity Books has the following transactions in August related to merchandise inventory.

Aug. 1	Beginning merchandise inventory, 10 books @ $15 each
3	Sold 3 books @ $20 each
12	Purchased 8 books @ $18 each
15	Sold 9 books @ $20 each
20	Purchased 4 books @ $20 each
28	Sold 5 books @ $25 each

a. Determine the cost of goods sold and ending merchandise inventory using the FIFO inventory costing method assuming Serenity Books uses the periodic inventory system.
b. Determine the cost of goods sold and ending merchandise inventory using the LIFO inventory costing method assuming Serenity Books uses the periodic inventory system.
c. Determine the cost of goods sold and ending merchandise inventory using the weighted-average inventory costing method assuming Serenity Books uses the periodic inventory system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S6A-11 through S6A-13. MyAccountingLab

REVIEW

> Things You Should Know

1. What are the accounting principles and controls that relate to merchandise inventory?

- Consistency principle: Businesses should use the same accounting methods and procedures from period to period.
- Disclosure principle: A company's financial statements should report enough information for outsiders to make knowledgeable decisions about the company.
- Materiality concept: A company must perform strictly proper accounting only for significant items.
- Conservatism: A company should exercise caution in reporting items in the financial statements.
- Controls over merchandise inventory ensure that inventory purchases and sales are properly authorized and accounted for by the accounting system.

2. How are merchandise inventory costs determined under a perpetual inventory system?

- Four costing methods can be used to determine merchandise inventory costs:
    - Specific identification method—Uses the specific cost of each unit of inventory to determine ending inventory and cost of goods sold.
    - First-in, first-out (FIFO) method—First costs into inventory are the first costs out to cost of goods sold; ending inventory is based on the costs of the most recent purchases.
    - Last-in, first-out (LIFO) method—Last costs into inventory are the first costs out to cost of goods sold; ending inventory is based on the costs of the oldest inventory.
    - Weighted-average method—Method based on the weighted-average cost per unit of inventory after each purchase. Weighted-average cost per unit is determined by dividing the cost of goods available for sale by the number of units available for sale.

3. How are financial statements affected by using different inventory costing methods?

- The FIFO method results in the lowest cost of goods sold and the highest gross profit when costs are rising.
- The LIFO method results in the highest cost of goods sold and the lowest gross profit when costs are rising.
- The weighted-average method generates amounts for cost of goods sold and gross profit that fall between FIFO and LIFO if costs are consistently increasing or decreasing.

4. How is merchandise inventory valued when using the lower-of-cost-or-market rule?

- Lower-of-cost-or-market requires that merchandise be reported in the financial statements at whichever is lower of the following:
    - The historical cost of the inventory
    - The market value of the inventory
- An adjusting entry must be recorded to write down merchandise inventory if the market value is lower than the historical cost.

5. What are the effects of merchandise inventory errors on the financial statements?

- An error in ending merchandise inventory creates a whole string of errors in other related accounts.
- One period's ending merchandise inventory becomes the next period's beginning merchandise inventory.

6. How do we use inventory turnover and days' sales in inventory to evaluate business performance?

- Inventory turnover measures how rapidly merchandise inventory is sold and is calculated as:

  Cost of goods sold / Average merchandise inventory.
- Days' sales in inventory measures the average number of days merchandise inventory is held by the company and is calculated as:

  365 days / Inventory turnover.

7. How are merchandise inventory costs determined under a periodic inventory system? (Appendix 6A)

- Specific identification, FIFO, LIFO, and weighted-average can be used in a periodic inventory system.
- Specific identification and FIFO will produce the same amounts for ending merchandise inventory and cost of goods sold under both the perpetual and periodic inventory systems.
- LIFO and weighted-average generally result in different amounts for ending merchandise inventory and cost of goods sold under the perpetual and periodic inventory systems.

> Summary Problem

Watches R Us specializes in designer watches and leather goods. Watches R Us uses the perpetual inventory system. Assume Watches R Us began June holding 10 wristwatches that cost $50 each. During June, Watches R Us bought and sold inventory as follows:

Jun. 3	Sold 8 units for $100 each.
16	Purchased 10 units at $56 each.
23	Sold 8 units for $100 each.

Requirements

1. Prepare a perpetual inventory record for Watches R Us using the FIFO, LIFO, and weighted-average inventory costing methods.
2. Journalize all of Watches R Us's inventory transactions for June under all three costing methods. Assume all sales and purchases are on account. Explanations are not required.
3. Show the computation of gross profit for each method.
4. Which method maximizes net income? Which method minimizes income taxes?

> Solution

1. Perpetual inventory records:

FIFO:

	Purchases			Cost of Goods Sold				Inventory on Hand			
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost		Quantity	Unit Cost	Total Cost	
Jun. 1								10 units	× $ 50	= $ 500	$ 500
3				8 units	× $ 50	= $ 400	$ 400	2 units	× $ 50	= $ 100	$ 100
16	10 units	× $ 56	= $ 560					2 units 10 units	× $ 50 × $ 56	= $ 100 = $ 560	$ 660
23				2 units 6 units	× $ 50 × $ 56	= $ 100 = $ 336	$ 436	4 units	× $ 56	= $ 224	$ 224
Totals	10 units		$ 560	16 units			$ 836	4 units			$ 224

LIFO:

	Purchases			Cost of Goods Sold				Inventory on Hand			
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost		Quantity	Unit Cost	Total Cost	
Jun. 1								10 units	× $ 50	= $ 500	$ 500
3				8 units	× $ 50	= $ 400	$ 400	2 units	× $ 50	= $ 100	$ 100
16	10 units	× $ 56	= $ 560					2 units 10 units	× $ 50 × $ 56	= $ 100 = $ 560	$ 660
23				8 units	× $ 56	= $ 448	$ 448	2 units 2 units	× $ 50 × $ 56	= $ 100 = $ 112	$ 212
Totals	10 units		$ 560	16 units			$ 848	4 units			$ 212

Weighted-Average:

	Purchases			Cost of Goods Sold			Inventory on Hand			
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	
Jun. 1							10 units	× $ 50	= $ 500	
3				8 units	× $ 50	= $ 400	2 units	× $ 50	= $ 100	
16	10 units	× $ 56	= $ 560				12 units	× $ 55	= $ 660	$ 660 / 12 units = $ 55
23				8 units	× $ 55	= $ 440	4 units	× $ 55	= $ 220	
Totals	10 units		$ 560	16 units		$ 840	4 units		$ 220	

2. Journal entries:

FIFO:

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Accounts Receivable	800	
	Sales Revenue		800
3	Cost of Goods Sold	400	
	Merchandise Inventory		400
16	Merchandise Inventory	560	
	Accounts Payable		560
23	Accounts Receivable	800	
	Sales Revenue		800
23	Cost of Goods Sold	436	
	Merchandise Inventory		436

LIFO:

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Accounts Receivable	800	
	Sales Revenue		800
3	Cost of Goods Sold	400	
	Merchandise Inventory		400
16	Merchandise Inventory	560	
	Accounts Payable		560
23	Accounts Receivable	800	
	Sales Revenue		800
23	Cost of Goods Sold	448	
	Merchandise Inventory		448

Weighted-average:

Date	Accounts and Explanation	Debit	Credit
Jun. 3	Accounts Receivable	800	
	Sales Revenue		800
3	Cost of Goods Sold	400	
	Merchandise Inventory		400
16	Merchandise Inventory	560	
	Accounts Payable		560
23	Accounts Receivable	800	
	Sales Revenue		800
23	Cost of Goods Sold	440	
	Merchandise Inventory		440

3. Gross profit:

	FIFO	LIFO	Weighted-Average
Sales Revenue ($800 + $800)	$ 1,600	$ 1,600	$ 1,600
Less: Cost of Goods Sold ($400 + $436)	836		
($400 + $448)		848	
($400 + $440)			840
Gross Profit	$ 764	$ 752	$ 760

4. FIFO maximizes net income.
   LIFO minimizes income taxes.

> Key Terms

Conservatism (p. 350)
Consistency Principle (p. 349)
Cost of Goods Available for Sale (p. 354)
Days' Sales in Inventory (p. 368)
Disclosure Principle (p. 349)
First-In, First-Out (FIFO) Method (p. 354)
Inventory Costing Method (p. 353)
Inventory Turnover (p. 368)
Last-In, First-Out (LIFO) Method (p. 355)
Lower-of-Cost-or-Market (LCM) Rule (p. 363)
Materiality Concept (p. 350)
Specific Identification Method (p. 353)
Weighted-Average Method (p. 357)

> Quick Check

Learning Objective 1

1. Which principle or concept states that businesses should use the same accounting methods and procedures from period to period?

   a. Disclosure **b.** Conservatism **c.** Consistency **d.** Materiality

Learning Objective 2

2. Which inventory costing method assigns to ending merchandise inventory the newest—the most recent—costs incurred during the period?

   a. First-in, first-out (FIFO)
   b. Weighted-average
   c. Specific identification
   d. Last-in, first-out (LIFO)

Learning Objective 2

3. Assume Nile.com began April with 14 units of inventory that cost a total of $266. During April, Nile.com purchased and sold goods as follows:

Apr. 8	Purchase	42 units @ $ 20
14	Sale	35 units @ $ 40
22	Purchase	28 units @ $ 22
27	Sale	42 units @ $ 40

   Under the FIFO inventory costing method and the perpetual inventory system, how much is Nile.com's cost of goods sold for the sale on April 14?

   a. $1,106 **b.** $686 **c.** $1,400 **d.** $700

Learning Objective 2

4. Suppose Nile.com used the weighted-average inventory costing method and the perpetual inventory system. Use the Nile.com data in Question 3 to compute the weighted-average unit cost of the company's inventory on hand at April 8. Round weighted-average unit cost to the nearest cent.

   a. $21.00
   b. $19.75
   c. $19.50
   d. Cannot be determined from the data given

Learning Objective 3

5. Which inventory costing method results in the lowest net income during a period of rising inventory costs?

   a. Weighted-average
   b. Specific identification
   c. First-in, first-out (FIFO)
   d. Last-in, first-out (LIFO)

Learning Objective 4

6. Which of the following is most closely linked to accounting conservatism?

   a. Lower-of-cost-or-market rule
   b. Materiality concept
   c. Disclosure principle
   d. Consistency principle

Learning Objective 5

7. At December 31, 2016, Stevenson Company overstated ending inventory by $36,000. How does this error affect cost of goods sold and net income for 2016?

   a. Overstates cost of goods sold and understates net income
   b. Understates cost of goods sold and overstates net income
   c. Leaves both cost of goods sold and net income correct because the errors cancel each other
   d. Overstates both cost of goods sold and net income

Learning Objective 6

8. Suppose Maestro's had cost of goods sold during the year of $230,000. Beginning merchandise inventory was $35,000, and ending merchandise inventory was $45,000. Determine Maestro's inventory turnover for the year. Round to the nearest hundredth.
   - **a.** 6.57 times per year
   - **b.** 5.75 times per year
   - **c.** 5.11 times per year
   - **d.** 17.39 times per year

Learning Objective 7
Appendix 6A

9A. Suppose Nile.com used the LIFO inventory costing method and the periodic inventory system. Use the Nile.com data in Question 3 to determine Nile.com's cost of goods sold at the end of the month.
   - **a.** $1,568
   - **b.** $133
   - **c.** $1,589
   - **d.** $154

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. Which principle states that businesses should use the same accounting methods and procedures from period to period?
2. What does the disclosure principle require?
3. Discuss the materiality concept. Is the dollar amount that is material the same for a company that has annual sales of $10,000 compared with a company that has annual sales of $1,000,000?
4. What is the goal of conservatism?
5. Discuss some measures that should be taken to maintain control over merchandise inventory.
6. Under a perpetual inventory system, what are the four inventory costing methods and how does each method determine ending merchandise inventory and cost of goods sold?
7. When using a perpetual inventory system and the weighted-average inventory costing method, when does the business compute a new weighted-average cost per unit?
8. During periods of rising costs, which inventory costing method produces the highest gross profit?
9. What does the lower-of-cost-or-market (LCM) rule require?
10. What account is debited when recording the adjusting entry to write down merchandise inventory under the LCM rule?
11. What is the effect on cost of goods sold, gross profit, and net income if ending merchandise inventory is understated?
12. When does an inventory error cancel out, and why?
13. How is inventory turnover calculated, and what does it measure?
14. How is days' sales in inventory calculated, and what does it measure?

15A. When using the periodic inventory system, which inventory costing method(s) always produces the same result as when using the perpetual inventory system?

16A. When using the periodic inventory system and weighted-average inventory costing method, when is the weighted-average cost per unit computed?

> Short Exercises

For all short exercises, assume the perpetual inventory system is used unless stated otherwise.

Learning Objective 1

S6-1 Determining inventory accounting principles

Ward Hardware used the FIFO inventory costing method in 2017. Ward plans to continue using the FIFO method in future years. Which accounting principle is most relevant to Ward's decision?

Learning Objective 2

S6-2 Determining inventory costing methods

Ward Hardware does not expect costs to change dramatically and wants to use an inventory costing method that averages cost changes.

Requirements

1. Which inventory costing method would best meet Ward's goal?
2. Assume Ward wanted to expense out the newer purchases of goods instead. Which inventory costing method would best meet that need?

Use the following information to answer Short Exercises S6-3 through S6-6.

Washington Cycles started August with 25 bicycles that cost $65 each. On March 16, Shepherd bought 50 bicycles at $80 each. On March 31, Shepherd sold 31 bicycles for $99 each.

Learning Objective 2

S6-3 Preparing a perpetual inventory record and journal entries—Specific identification

Requirements

1. Prepare Washington Cycle's perpetual inventory record assuming the company uses the specific identification inventory costing method. Assume that Washington sold 20 bicycles that cost $65 each and 11 bicycles that cost $80 each.
2. Journalize the March 16 purchase of merchandise inventory on account and the March 31 sale of merchandise inventory on account.

Learning Objective 2

S6-4 Preparing a perpetual inventory record and journal entries—FIFO

Requirements

1. Prepare Shepherd Cycles perpetual inventory record assuming the company uses the FIFO inventory costing method.
2. Journalize the March 16 purchase of merchandise inventory on account and the March 31 sale of merchandise inventory on account.

Learning Objective 2

S6-5 Preparing a perpetual inventory record and journal entries—LIFO

Requirements

1. Prepare Washington's Cycle's perpetual inventory record assuming the company uses the LIFO inventory costing method.
2. Journalize the March 16 purchase of merchandise inventory on account and the March 31 sale of merchandise inventory on account.

S6-6 Preparing a perpetual inventory record and journal entries—Weighted-average

Learning Objective 2

Requirements

1. Prepare Washington's Cycle perpetual inventory record assuming the company uses the weighted-average inventory costing method.
2. Journalize the March 16 purchase of merchandise inventory on account and the March 31 sale of merchandise inventory on account.

Note: Short Exercises S6-4, S6-5, and S6-6 must be completed before attempting Short Exercise S6-7.

S6-7 Comparing Cost of Goods Sold under FIFO, LIFO, and Weighted-average

Learning Objective 3

Refer to Short Exercises S6-4 through S6-6. After completing those exercises, answer the following questions:

Requirements

1. Which inventory costing method produced the lowest cost of goods sold?
2. Which inventory costing method produced the highest cost of goods sold?
3. If costs had been declining instead of rising, which inventory costing method would have produced the highest cost of goods sold?

S6-8 Applying the lower-of-cost-or-market rule

Learning Objective 4

Assume that a Mega Burger restaurant has the following perpetual inventory record for hamburger patties:

Date	Purchases	Cost of Goods Sold	Merchandise Inventory on Hand
Jul. 9	$ 510		$ 510
22		$ 300	210
31	170		380

At July 31, the accountant for the restaurant determines that the current replacement cost of the ending merchandise inventory is $431. Make any adjusting entry needed to apply the lower-of-cost-or-market rule. Merchandise inventory would be reported on the balance sheet at what value on July 31?

S6-9 Determining the effect of an inventory error

Learning Objective 5

New York Pool Supplies's merchandise inventory data for the year ended December 31, 2017, follow:

Sales Revenue		$ 51,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 3,400	
Net Cost of Purchases	22,600	
Cost of Goods Available for Sale	26,000	
Less: Ending Merchandise Inventory	4,300	
Cost of Goods Sold		21,700
Gross Profit		**$ 29,300**

Requirements

1. Assume that the ending merchandise inventory was accidentally overstated by $1,900. What are the correct amounts for cost of goods sold and gross profit?
2. How would the inventory error affect New York Pool Supplies's cost of goods sold and gross profit for the year ended December 31, 2018, if the error is not corrected in 2017?

Learning Objective 6

S6-10 Computing the rate of inventory turnover and days' sales in inventory

Liberty Communications reported the following figures in its annual financial statements:

Cost of Goods Sold	$ 18,500
Beginning Merchandise Inventory	560
Ending Merchandise Inventory	490

Compute the rate of inventory turnover and days' sales in inventory for Liberty Communications. (Round to two decimals.)

Use the following information to answer Short Exercises S6A-11 through S6A-13.

The periodic inventory records of Cambridge Prosthetics indicate the following for the month of July:

Jul. 1	Beginning merchandise inventory	18 units @ $ 55 each
8	Purchase	15 units @ $ 60 each
15	Purchase	12 units @ $ 61 each
26	Purchase	11 units @ $ 62 each

At July 31, Cambridge counts nine units of merchandise inventory on hand.

Learning Objective 7
Appendix 6A

S6A-11 Computing periodic inventory amounts—FIFO

Compute ending merchandise inventory and cost of goods sold for Cambridge using the FIFO inventory costing method.

Learning Objective 7
Appendix 6A

S6A-12 Computing periodic inventory amounts—LIFO

Compute ending merchandise inventory and cost of goods sold for Cambridge using the LIFO inventory costing method.

Learning Objective 7
Appendix 6A

S6A-13 Computing periodic inventory amounts—Weighted-average

Compute ending merchandise inventory and cost of goods sold for Cambridge using the weighted-average inventory costing method.

> Exercises

For all exercises, assume the perpetual inventory system is used unless stated otherwise.

E6-14 Using accounting vocabulary

Learning Objectives 1, 2

Match the accounting terms with the corresponding definitions.

1. Specific Identification
2. Materiality Concept
3. Last-In, First-Out (LIFO)
4. Conservatism
5. Consistency Principle
6. Weighted-Average
7. Disclosure Principle
8. First-In, First-Out (FIFO)

a. Treats the oldest inventory purchases as the first units sold.
b. Requires that a company report enough information for outsiders to make knowledgeable decisions.
c. Identifies exactly which inventory item was sold. Usually used for higher cost inventory.
d. Calculates a weighted-average cost based on the cost of goods available for sale and the number of units available.
e. Principle whose foundation is to exercise caution in reporting financial statement items.
f. Treats the most recent/newest purchases as the first units sold.
g. Businesses should use the same accounting methods from period to period.
h. Principle that states significant items must conform to GAAP.

E6-15 Comparing inventory methods

Learning Objective 2

1. Ending Merch. Inv. $20.70

Fast Mart, a regional convenience store chain, maintains milk inventory by the gallon. The first month's milk purchases and sales at its Denver, Colorado, location follow:

May 2	Purchased 11 gallons @ $2.00 each
6	Purchased 2 gallons @ $2.65 each
8	Sold 3 gallons of milk to a customer
13	Purchased 2 gallons@ $2.70 each
14	Sold 3 gallons of milk to a customer

Requirements

1. Determine the amount that would be reported in ending merchandise inventory on May 15 using inventory costing method.
2. Determine the amount that would be reported in ending merchandise inventory on May 15 using inventory costing method.
3. Determine the amount that would be reported in ending merchandise inventory on May 15 using inventory costing method.

Use the following information to answer Exercises E6-16 through E6-18.

Putter's Choice carries an inventory of putters and other golf clubs. The sales price of each putter is $120. Company records indicate the following for a particular line of Putter's Paradise's putters:

Date	Item	Quantity	Unit Cost
Nov. 1	Balance	10	$ 64
6	Sale	5	
8	Purchase	15	$ 72
17	Sale	15	
30	Sale	3	

Learning Objective 2

1. COGS $2,940

E6-16 Measuring and journalizing merchandise inventory and cost of goods sold—FIFO

Requirements

1. Prepare a perpetual inventory record for the putters assuming Putter's Choice uses the FIFO method. Then identify the cost of ending inventory and cost of goods sold for the month.
2. Journalize Putter's Choice's inventory transactions using the FIFO inventory costing method and sales are made on account.)

Learning Objective 2

1. Ending Merch. Inv. $300

E6-17 Measuring ending inventory and cost of goods sold in a perpetual inventory system—LIFO

Requirements

1. Prepare Putter's Paradise perpetual inventory record for the putters assuming Putter's Choice uses the LIFO inventory costing method. Then identify the cost of ending inventory and cost of goods sold for the month.
2. Journalize Putter's Paradise inventory transactions using the LIFO inventory costing method. (Assume purchases and sales are made on account.)

Learning Objective 2

1. COGS $2,970

E6-18 Measuring ending inventory and cost of goods sold in a perpetual inventory system—Weighted-average

Requirements

1. Prepare Putter's Paradise perpetual inventory record for the putters assuming Putter's Choice uses the weighted-average inventory costing method. Round weighted-average cost per unit to the nearest cent and all other amounts to the nearest dollar. Then identify the cost of ending inventory and cost of goods sold for the month.
2. Journalize Putter's Paradise inventory transactions using the weighted-average inventory costing method. (Assume purchases and sales are made on account.)

Learning Objectives 2, 3

2. Ending Merch. Inv. $70

E6-19 Comparing amounts for cost of goods sold, ending inventory, and gross profit—FIFO and LIFO

Assume that J R Toys store bought and sold a line of dolls during December as follows:

Dec. 1	Beginning merchandise inventory	12 units @ $ 8 each
8	Sale	9 units @ $ 20 each
14	Purchase	17 units @ $ 14 each
21	Sale	15 units @ $ 20 each

J R Toys uses the perpetual inventory system.

Requirements

1. Compute the cost of cost of goods sold, cost of ending merchandise inventory, and gross profit inventory costing method.
2. Compute the cost of cost of goods sold, cost of ending merchandise inventory, and gross profit inventory costing method.
3. Which method results in a higher cost of goods sold?
4. Which method results in a higher cost of ending merchandise inventory?
5. Which method results in a higher gross profit?

Learning Objectives 2, 3

1. COGS $2,178

E6-20 Comparing cost of goods sold and gross profit—FIFO, LIFO, and weighted-average methods

Assume that Blackwall Tire Store completed the following perpetual inventory transactions for a line of tires:

Jul. 1	Beginning merchandise inventory	24 tires @ $ 61 each
11	Purchase	6 tires @ $ 76 each
23	Sale	16 tires @ $ 85 each
26	Purchase	14 tires @ $ 86 each
29	Sale	17 tires @ $ 85 each

Requirements

1. Compute cost of goods sold and gross profit using the FIFO inventory costing method.
2. Compute cost of goods sold and gross profit using the LIFO inventory costing method.
3. Compute cost of goods sold and gross profit using the weighted-average inventory costing method. (Round weighted-average cost per unit to the nearest cent and all other amounts to the nearest dollar.)
4. Which method results in the largest gross profit and why?

Learning Objective 4

1. CR Merch. Inv. $1,000

E6-21 Applying the lower-of-cost-or-market rule to merchandise inventories

Rapid Resources, which uses the FIFO inventory costing method, has the following account balances at May 31, 2017, prior to releasing the financial statements for the year:

Merchandise Inventory, ending	$ 14,500
Cost of Goods Sold	70,000
Sales Revenue	118,000

Rapid has determined that the current replacement cost (current market value) of the May 31, 2017, ending merchandise inventory is $13,500.

Requirements

1. Prepare any adjusting journal entry required from the information given.
2. What value would Rapid report on the balance sheet at May 31, 2017, for merchandise inventory?

Learning Objective 4

2. GP $69,000

E6-22 Applying the lower-of-cost-or-market rule to inventories

Valley Source Foods reports merchandise inventory at the lower-of-cost-or-market. Prior to releasing its financial statements for the year ended May 31, 2017, Valley Source's *preliminary* income statement, before the year-end adjustments, appears as follows:

Valley Source Foods
Income Statement (Partial)
Year Ended May 31, 2017

Sales Revenue	$ 116,000
Cost of Goods Sold	51,000
Gross Profit	$ 65,000

Valley Source has determined that the current replacement cost of ending merchandise inventory is $19,500. Cost is $21,000.

Requirements

1. Journalize the adjusting entry for merchandise inventory, if any is required.
2. Prepare a revised partial income statement to show how Valley Source Foods should report sales, cost of goods sold, and gross profit.

Learning Objective 5

b. Correct GP $25,000

E6-23 Measuring the effect of an inventory error

Aunt Martha Bakery reported sales revenue of $30,000 and cost of goods sold of $17,000. Compute Aunt Martha's correct gross profit if the company made either of the following independent accounting errors.

a. Ending merchandise inventory is overstated by $4,000.

b. Ending merchandise inventory is understated by $4,000.

E6-24 Correcting an inventory error—two years

Learning Objective 5

2. 2017, understated $5,000

Eat Well Grocery reported the following comparative income statements for the years ended April 30, 2017 and 2016:

(Requirement 1 only)

Eat Well Grocery
Income Statements
Years Ended April 30, 2017 and 2016

	2017		2016	
Sales Revenue		$ 134,000		$ 123,000
Cost of Goods Sold:				
Beginning Merchandise Inventory	$ 15,000		$ 9,000	
Net Cost of Purchases	74,000		69,000	
Cost of Goods Available for Sale	89,000		78,000	
Less: Ending Merchandise Inventory	16,500		15,000	
Cost of Goods Sold		72,500		63,000
Gross Profit		61,500		60,000
Operating Expenses		24,000		20,000
Net Income		**$ 37,500**		**$ 40,000**

During 2017, Eat Well discovered that ending 2016 merchandise inventory was overstated by $4,500.

Requirements

1. Prepare corrected income statements for the two years.
2. State whether each year's net income—before your corrections—is understated or overstated, and indicate the amount of the understatement or overstatement.

E6-25 Computing inventory turnover and days' sales in inventory

Learning Objective 6

2. 60.43 days

Hope Life reported the following income statement for the year ended December 31, 2017:

Hope Life
Income Statement
Year Ended December 31, 2017

Sales Revenue		$ 130,000
Cost of Goods Sold:		
Beginning Merchandise Inventory	$ 12,200	
Net Cost of Purchases	60,000	
Cost of Goods Available for Sale	72,200	
Less: Ending Merchandise Inventory	16,400	
Cost of Goods Sold		55,800
Gross Profit		74,200
Operating Expenses		42,900
Net Income		**$ 31,300**

Requirements

1. Compute Hope Life's inventory turnover rate for the year. (Round to two decimal places.)
2. Compute Hope Life's days' sales in inventory for the year. (Round to two decimal places.)

Learning Objective 7
Appendix 6A

2. COGS $899

E6A-26 Comparing ending merchandise inventory, cost of goods sold, and gross profit using the periodic inventory system—FIFO, LIFO, and weighted-average methods

Assume that Heavenly Coffee Shop completed the following *periodic* inventory transactions for a line of merchandise inventory:

Jun. 1	Beginning merchandise inventory	19 units @ $ 27 each
12	Purchase	7 units @ $ 28 each
20	Sale	11 units @ $ 39 each
24	Purchase	14 units @ $ 29 each
29	Sale	21 units @ $ 39 each

Requirements

1. Compute ending merchandise inventory, cost of goods sold, and gross profit using the FIFO inventory costing method.
2. Compute ending merchandise inventory, cost of goods sold, and gross profit using the LIFO inventory costing method.
3. Compute ending merchandise inventory, cost of goods sold, and gross profit using the weighted-average inventory costing method. (Round weighted-average cost per unit to the nearest cent and all other amounts to the nearest dollar.)

Learning Objective 7
Appendix 6A

E6A-27 Computing periodic inventory amounts

Consider the data of the following companies:

Company	Net Sales Revenue	Beginning Merchandise Inventory	Net Cost of Purchases	Ending Merchandise Inventory	Cost of Goods Sold	Gross Profit
Ash	$ 103,000	$ 20,000	$ 64,000	$ 19,000	$ *(a)*	$ 38,000
Elm	*(b)*	25,000	90,000	*(c)*	94,000	42,000
Fir	95,000	*(d)*	57,000	23,000	64,000	*(e)*
Oak	83,000	12,000	*(f)*	8,000	*(g)*	47,000

Requirements

1. Supply the missing amounts in the preceding table.
2. Prepare the income statement for the year ended December 31, 2017, for Ash Company, which uses the periodic inventory system. Include a complete heading, and show the full computation of cost of goods sold. Ash's operating expenses for the year were $11,000.

> Problems Group A

For all problems, assume the perpetual inventory system is used unless stated otherwise.

Learning Objectives 2, 3

2. Ending Merch. Inv., $2,655

P6-28A Accounting for inventory using the perpetual inventory system—FIFO, LIFO, and weighted-average

Exercise Planet began July with merchandise inventory of 70 crates of vitamins that cost a total of $4,550. During the month, Exercise Planet purchased and sold merchandise on account as follows:

Jul. 5	Purchase	130 crates @ $ 76 each
13	Sale	140 crates @ $ 98 each
18	Purchase	150 crates @ $ 83 each
26	Sale	160 crates @ $ 110 each

Requirements

1. Prepare a perpetual inventory record, using the FIFO inventory costing method, and determine goods sold, ending merchandise inventory, and gross profit.
2. Prepare a perpetual inventory record, using the LIFO inventory costing method, and determine goods sold, ending merchandise inventory, and gross profit.
3. Prepare a perpetual inventory record, using the weighted-average inventory costing method, company's cost of goods sold, ending merchandise inventory, and gross profit. (Round weight to the nearest cent and all other amounts to the nearest dollar.)
4. If the business wanted to pay the least amount of income taxes possible, which method would

Learning Objectives 2, 3

5. FIFO GP $4,850

P6-29A Accounting for inventory using the perpetual inventory system—FIFO, LIFO, and weighted-average, and comparing FIFO, LIFO, and weighted-average

Iron Hill began August with 45 units of iron inventory that cost $24 each. During August, the company completed the following inventory transactions:

		Units	Unit Cost	Unit Sale Price
Aug. 3	Sale	35		$ 63
8	Purchase	70	$ 32	
21	Sale	65		77
30	Purchase	25	47	

Requirements

1. Prepare a perpetual inventory record for the merchandise inventory using the FIFO inventory costing method.
2. Prepare a perpetual inventory record for the merchandise inventory using the LIFO inventory costing method.

3. Prepare a perpetual inventory record for the merchandise inventory using the weighted-average method.
4. Determine the company's cost of goods sold for August using FIFO, LIFO, and weighted-average inventory costing methods.
5. Compute gross profit for August using FIFO, LIFO, and weighted-average inventory costing methods.
6. If the business wanted to maximize gross profit, which method would it select?

Learning Objectives 1, 4

3. COGS $420,000

P6-30A Accounting principles for inventory and applying the lower-of-cost-or-market rule

Some of L and M Electronics's merchandise is gathering dust. It is now December 31, 2016, and the current replacement cost of the ending merchandise inventory is $20,000 below the business's cost of the goods, which was $109,000. Before any adjustments at the end of the period, the company's Cost of Goods Sold account has a balance of $390,000.

Requirements

1. Journalize any required entries.
2. At what amount should the company report merchandise inventory on the balance sheet?
3. At what amount should the company report cost of goods sold on the income statement?
4. Which accounting principle or concept is most relevant to this situation?

Learning Objectives 5, 6

2. 2017, overstated $7,000

P6-31A Correcting inventory errors over a three-year period and computing inventory turnover and days' sales in inventory

Pond Rush Carpets's books show the following data:

In early 2018, auditors found that the ending merchandise inventory for 2015 was understated by $6,000 and that the ending merchandise inventory for 2017 was overstated by $7,000. The ending merchandise inventory at December 31, 2016, was correct.

	2017		2016		2015	
Net Sales Revenue		$ 208,000		$ 164,000		$ 177,000
Cost of Goods Sold:						
Beginning Merchandise Inventory	$ 21,000		$ 28,000		$ 39,000	
Net Cost of Purchases	140,000		103,000		91,000	
Cost of Goods Available for Sale	161,000		131,000		130,000	
Less: Ending Merchandise Inventory	33,000		21,000		28,000	
Cost of Goods Sold		128,000		110,000		102,000
Gross Profit		80,000		54,000		75,000
Operating Expenses		52,000		25,000		35,000
Net Income		**$ 28,000**		**$ 29,000**		**$ 40,000**

Requirements

1. Prepare corrected income statements for the three years.
2. State whether each year's net income—before your corrections—is understated or overstated, understatement or overstatement.
3. Compute the inventory turnover and days' sales in inventory using the corrected income statement all numbers to two decimals.)

P6A-32A Accounting for inventory using the periodic inventory system—FIFO, LIFO, and weighted-average, and comparing FIFO, LIFO, and weighted-average

Learning Objectives 3, 7
Appendix 6A

1. LIFO Ending Merch. Inv., $7,800

Right Now Electronic Center began July with 90 units of merchandise inventory that cost $60 each. During July, the store made the following purchases:

Jul. 3	60 units @ $ 80 each
12	70 units @ $ 82 each
18	60 units @ $ 89 each

Right Now uses the periodic inventory system, and the physical count at July 31 indicates that 140 units of inventory are on hand.

Requirements

1. Determine the ending merchandise inventory and cost of goods sold amounts for the July financial statements using the FIFO, LIFO, and weighted-average inventory costing methods.
2. Sales revenue for July totaled $24,000. Compute Right Now's gross profit for July using each method.
3. Which method will result in the lowest income taxes for Right Now? Why? Which method will result in the highest net income for Right Now? Why?

> Problems Group B

For all problems, assume the perpetual inventory system is used unless stated otherwise.

P6-33B Accounting for inventory using the perpetual inventory system—FIFO, LIFO, and weighted-average

Learning Objectives 2, 3

2. Ending Merch. Inv., $4,550

Athletic World began July with merchandise inventory of 68 crates of vitamins that cost a total of $4,080. During the month, Athletic World purchased and sold merchandise on account as follows:

Jul. 5	Purchase	132 crates @ $ 65 each
13	Sale	150 crates @ $ 96 each
18	Purchase	180 crates @ $ 84 each
26	Sale	185 crates @ $ 102 each

Requirements

1. Prepare a perpetual inventory record, using the FIFO inventory costing method, and determine goods sold, ending merchandise inventory, and gross profit.

2. Prepare a perpetual inventory record, using the LIFO inventory costing method, and determine goods sold, ending merchandise inventory, and gross profit.
3. Prepare a perpetual inventory record, using the weighted-average inventory costing method, company's cost of goods sold, ending merchandise inventory, and gross profit. (Round weight to the nearest cent and all other amounts to the nearest dollar.)
4. If the business wanted to pay the least amount of income taxes possible, which method would

Learning Objectives 2, 3

5. FIFO GP $5,640

P6-34B Accounting for inventory using the perpetual inventory system—FIFO, LIFO, and weighted-average, and comparing FIFO, LIFO, and weighted-average

Steel It began August with 55 units of iron inventory that cost $35 each. During August, the company completed the following inventory transactions:

		Units	Unit Cost	Unit Sale Price
Aug. 3	Sale	45		$ 83
8	Purchase	75	$ 52	
21	Sale	70		85
30	Purchase	10	55	

Requirements

1. Prepare a perpetual inventory record for the merchandise inventory using the FIFO inventory
2. Prepare a perpetual inventory record for the merchandise inventory using the LIFO inventory
3. Prepare a perpetual inventory record for the merchandise inventory using the weighted-average method.
4. Determine the company's cost of goods sold for August using FIFO, LIFO, and weighted-average methods.
5. Compute gross profit for August using FIFO, LIFO, and weighted-average inventory costing method.
6. If the business wanted to maximize gross profit, which method would it select?

Learning Objectives 1, 4

3. COGS $425,000

P6-35B Accounting principles for inventory and applying the lower-of-cost-or-market rule

Some of H and J Electronics's merchandise is gathering dust. It is now December 31, 2016, and the current replacement cost of the ending merchandise inventory is $22,000 below the business's cost of the goods, which was $97,000. Before any adjustments at the end of the period, the company's Cost of Goods Sold account has a balance of $412,000.

Requirements

1. Journalize any required entries.
2. At what amount should the company report merchandise inventory on the balance sheet?

3. At what amount should the company report cost of goods sold on the income statement?
4. Which accounting principle or concept is most relevant to this situation?

P6-36B Correcting inventory errors over a three-year period and computing inventory turnover and days' sales in inventory

Learning Objectives 5, 6

2. 2017, overstated $7,000

Harmony Carpets's books show the following data:

In early 2018, auditors found that the ending merchandise inventory for 2015 was understated by $4,000 and that the ending merchandise inventory for 2017 was overstated by $5,000. The ending merchandise inventory at December 31, 2016, was correct.

	2017		2016		2015	
Net Sales Revenue		$ 218,000		$ 161,000		$ 176,000
Cost of Goods Sold:						
Beginning Merchandise Inventory	$ 21,000		$ 25,000		$ 41,000	
Net Cost of Purchases	130,000		98,000		83,000	
Cost of Goods Available for Sale	151,000		123,000		124,000	
Less: Ending Merchandise Inventory	33,000		21,000		25,000	
Cost of Goods Sold		118,000		102,000		99,000
Gross Profit		100,000		59,000		77,000
Operating Expenses		75,000		29,000		43,000
Net Income		**$ 25,000**		**$ 30,000**		**$ 34,000**

Requirements

1. Prepare corrected income statements for the three years.
2. State whether each year's net income—before your corrections—is understated or overstated, understatement or overstatement.
3. Compute the inventory turnover and days' sales in inventory using the corrected income statement all numbers to two decimals.)

P6A-37B Accounting for inventory using the periodic inventory system—FIFO, LIFO, and weighted-average, and comparing FIFO, LIFO, and weighted-average

Learning Objectives 3, 7
Appendix 6A

1. LIFO Ending Merch. Inv., $10,200

Best Yet Electronic Center began October with 100 units of merchandise inventory that cost $78 each. During October, the store made the following purchases:

Oct. 3	40 units @ $ 80 each
12	60 units @ $ 82 each
18	40 units @ $ 94 each

Best Yet uses the periodic inventory system, and the physical count at October 31 indicates that 130 units of merchandise inventory are on hand.

Requirements

1. Determine the ending merchandise inventory and cost of goods sold amounts for the October financial statements using the FIFO, LIFO, and weighted-average inventory costing methods.

2. Sales revenue for October totaled $23,000. Compute Best Yet's gross profit for October using each method.
3. Which method will result in the lowest income taxes for Best Yet? Why? Which method will result in the highest net income for Best Yet? Why?

> Continuing Problem

P6-38 Accounting for inventory using the perpetual inventory system—FIFO

This problem continues the Daniels Consulting situation from Problem P5-45 in Chapter 5. Consider the January transactions for Daniels Consulting that were presented in Chapter 5. (Cost data have been removed from the sale transactions.) Daniels uses the perpetual inventory system.

Jan. 2	Completed a consulting engagement and received cash of $5,700.
2	Prepaid three months office rent, $2,400.
7	Purchased 50 units software inventory on account, $1,050, plus freight in, $50.
18	Sold 40 software units on account, $2,625.
19	Consulted with a client for a fee of $2,500 on account.
20	Paid employee salaries, $1,885, which includes accrued salaries from December.
21	Paid on account, $1,100.
22	Purchased 185 units software inventory on account, $4,810.
24	Paid utilities, $375.
28	Sold 135 units software for cash, $5,265.
31	Recorded the following adjusting entries: a. Accrued salaries expense, $775 b. Depreciation on Equipment, $60; Depreciation on Furniture, $50 c. Expiration of prepaid rent, $800 d. Physical count of software inventory, 50 units

Requirements

1. Prepare perpetual inventory records for January for Daniels using the FIFO inventory costing method. (Note: You must calculate the cost of goods sold on the 18th, 28th, and 31st.)
2. Journalize the transactions for January 18th, 28th, and 31st (adjusting entry d only) using the perpetual inventory record created in Requirement 1.

> Practice Set

This problem continues the Crystal Clear Cleaning problem begun in Chapter 2 and continued through Chapter 5.

P6-39 Accounting for inventory using the perpetual inventory system—FIFO

Consider the December transactions for Crystal Clear Cleaning that were presented in Chapter 5. (Cost data have been removed from the sale transactions.) Crystal Clear uses the perpetual inventory system.

Dec. 2	Purchased 475 units of inventory for $2,850 on account from Sparkle, Co. on terms, 3/10, n/20.
5	Purchased 600 units of inventory from Borax on account with terms 2/10, n/30. The total invoice was for $4,500, which included a $150 freight charge.
7	Returned 75 units of inventory to Sparkle from the December 2 purchase.
9	Paid Borax.
11	Sold 285 units of goods to Happy Maids for $3,990 on account with terms 3/10, n/30.
12	Paid Sparkle.
15	Received 22 units with a retail price of $308 of goods back from customer Happy Maids. The goods cost Crystal Clear $132.
21	Received payment from Happy Maids, settling the amount due in full.
28	Sold 265 units of goods to Bridget, Inc. for cash of $3,975.
29	Paid cash for utilities of $415.
30	Paid cash for Sales Commission Expense of $550.
31	Recorded the following adjusting entries: a. Physical count of inventory on December 31 showed 428 units of goods on hand. b. Depreciation, $270 c. Accrued salaries expense of $725 d. Prepared all other adjustments necessary for December (Hint: You will need to review the adjustment information in Chapter 3 to determine the remaining adjustments). Assume the cleaning supplies left at December 31 are $30.

Requirements

1. Prepare perpetual inventory records for December for Crystal Clear Cleaning using the FIFO inventory costing method. (Note: You must calculate the cost of goods sold on the 11th, 28th, and 31st.)
2. Journalize the transactions for December 11th, 28th, and 31st (adjusting entry a only) using the perpetual inventory record created in Requirement 1.

CRITICAL THINKING

> Decision Case 6-1

Suppose you manage Campbell Appliance. The store's summarized financial statements for 2017, the most recent year, follow:

CAMPBELL APPLIANCE
Income Statement
Year Ended December 31, 2017

Sales	$ 800,000
Cost of Goods Sold	660,000
Gross Profit	140,000
Operating Expenses	100,000
Net Income	**$ 40,000**

CAMPBELL APPLIANCE
Balance Sheet
December 31, 2017

Assets		**Liabilities and Stockholders' Equity**	
Cash	$ 30,000	Accounts Payable	$ 35,000
Inventories	75,000	Note Payable	280,000
Land and Buildings, Net	360,000	Total Liabilities	315,000
		Stockholders' Equity	150,000
Total Assets	**$ 465,000**	Total Liabilities and Stockholders' Equity	**$ 465,000**

Assume that you need to double net income. To accomplish your goal, it will be very difficult to raise the prices you charge because there is a discount appliance store nearby. Also, you have little control over your cost of goods sold because the appliance manufacturers set the amount you must pay.

Identify several strategies for doubling net income.

> Fraud Case 6-1

Ever since he was a kid, Carl Montague wanted to be a pro football player. When that didn't work out, he found another way to channel his natural competitive spirit: He bought a small auto parts store in Kentucky that was deep in red ink (negative earnings). At the end of the year, he created "ghost" inventory by recording fake inventory purchases. He offset these transactions by "adjustments" to Cost of Goods Sold, thereby boosting profit and strengthening the balance sheet. Fortified with great financials, he got bank loans that allowed him to build up a regional chain of stores, buy a local sports franchise, and take on the lifestyle of a celebrity. When the economy in the region tanked, he could no longer cover his losses with new debt or equity infusions, and the whole empire fell like a house of cards.

Requirements

1. Name several parties that could have been hurt by the actions of Carl Montague.
2. What kind of adjustment to Cost of Goods Sold (debit or credit) would have the effect of boosting earnings?

> Financial Statement Case 6-1

The notes are an important part of a company's financial statements, giving valuable details that would clutter the tabular data presented in the statements. This case will help you learn to use a company's inventory notes. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to **Starbucks Corporation's** Fiscal 2013 Annual Report. Access the financial statements and related notes, and answer the following questions:

Requirements

1. Which inventory costing method does Starbucks use? How does Starbucks value its inventories? See Note 1.
2. By using the cost of goods sold formula, you can compute net purchases, which are not reported in the Starbucks statements. How much were Starbucks's inventory purchases during the year ended September 29, 2013?
3. Determine Starbucks's inventory turnover and days' sales in inventory for the year ended September 29, 2013. (Round each ratio to one decimal place.) How do Starbucks's inventory turnover and days' sales in inventory compare with **Green Mountain Coffee Roasters, Inc.'s** for the year ended September 28, 2013? Explain.

> Team Project 6-1

Obtain the annual reports of as many companies as you have team members—one company per team member. Most companies post their financial statements on their Web sites.

Requirements

1. Identify the inventory method used by each company.
2. Compute each company's gross profit percentage, inventory turnover, and days' sales in inventory for the most recent two years.
3. For the industries of the companies you are analyzing, obtain the industry averages for gross profit percentage and inventory turnover from Robert Morris Associates, *Annual Statement Studies*; Dun and Bradstreet, *Industry Norms and Key Business Ratios*; or Leo Troy, *Almanac of Business and Industrial Financial Ratios*.
4. How well does each of your companies compare with the average for its industry? What insight about your companies can you glean from these ratios?

> Quick Check Answers

1. c **2.** a **3.** b **4.** b **5.** d **6.** a **7.** b **8.** b **9A.** c

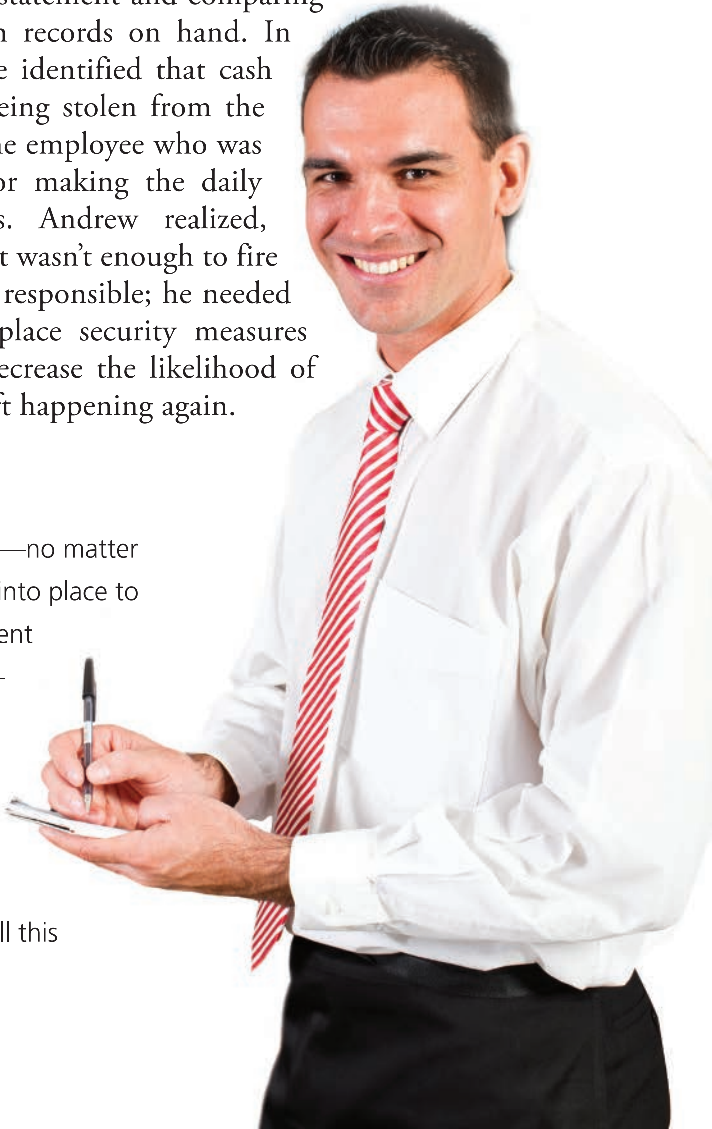
7 Internal Control and Cash

Where Did the Cash Go?

Andrew Goard, chief financial officer of a sports-themed restaurant located in Brentwood, California, stared at the bank statement on his desk. The business recently experienced record-breaking revenue due to increased customer traffic and expanded menu and drink offerings. Andrew knew that the expenses of the business had also increased, but he had expected the cash in the business's checking account to increase, not decrease, as the bank statement was showing.

Andrew wondered if it was possible that one of his employees was stealing money from the cash register. He really liked all of his employees and didn't think that any of them would steal from the business. But the deposits on the bank statement from customer sales just didn't make sense. Given the increased sales, the cash deposits should have been much higher.

Andrew knew that it was his responsibility to ensure that procedures were put into place to be sure the cash and other assets of the business remained secure. He had thought that completing employee background checks was enough to prevent the theft of the business's assets, but he now suspected that further controls needed to be put into place. Andrew began by reviewing the bank statement and comparing it to the cash records on hand. In doing this, he identified that cash was indeed being stolen from the business by the employee who was responsible for making the daily cash deposits. Andrew realized, though, that it wasn't enough to fire the employee responsible; he needed to put into place security measures that would decrease the likelihood of employee theft happening again.



What Are Internal Controls?

Safeguarding and securing assets should be a concern of all businesses—no matter how small or large the business is. The procedures that businesses put into place to protect their assets are called *internal controls* and are a key management responsibility. For example, Buffalo Wild Wings Grill & Bar, a New York–style wing restaurant chain that offers a sports bar atmosphere and a full menu featuring everything from salads to wings, must assure its investors that proper controls have been put into place to protect its assets, promote operational efficiency, and ensure accurate and reliable accounting records. In this chapter, we look at the policies and procedures that companies such as Buffalo Wild Wings use to fulfill this responsibility.

Chapter 7 Learning Objectives

1 Define internal control and describe the components of internal control and control procedures

2 Apply internal controls to cash receipts

3 Apply internal controls to cash payments

4 Explain and journalize petty cash transactions

5 Demonstrate the use of a bank account as a control device and prepare a bank reconciliation and related journal entries

6 Use the cash ratio to evaluate business performance

WHAT IS INTERNAL CONTROL, AND HOW CAN IT BE USED TO PROTECT A COMPANY'S ASSETS?

Learning Objective 1
Define internal control and describe the components of internal control and control procedures

A key responsibility of a business manager is to control operations. Owners set goals, hire managers to lead the way, and hire employees to carry out the business plan. **Internal control** is the organizational plan and all the related measures designed to accomplish the following:

1. **Safeguard assets.** A company must protect its assets; otherwise it is throwing away resources. If you fail to safeguard cash, the most liquid of assets, it will quickly slip away.
2. **Encourage employees to follow company policies.** Everyone in an organization needs to work toward the same goals. It is important for a business to identify policies to help meet the company's goals. These policies are also important for the company to ensure that all customers are treated similarly and that results can be measured effectively.
3. **Promote operational efficiency.** Businesses cannot afford to waste resources. Businesses work hard to make sales and do not want to waste any of the benefits. Promoting operational efficiency reduces expenses and increases business profits.
4. **Ensure accurate, reliable accounting records.** Accurate, reliable accounting records are essential. Without reliable records, managers cannot tell which part of the business is profitable and which part needs improvement. A business could be losing money on every product sold and not realize it—unless it keeps accurate and reliable records.

Internal Control
The organizational plan and all the related measures adopted by an entity to safeguard assets, encourage employees to follow company policies, promote operational efficiency, and ensure accurate and reliable accounting records.

Internal Control and the Sarbanes-Oxley Act

How critical are internal controls for public companies? They are so important that the U.S. Congress passed a law requiring a **public company**—one that sells its stock to the general public—to maintain a system of internal controls.

Public Company
A company that sells its stock to the general public.

The Enron Corporation and WorldCom accounting scandals rocked the United States in the early years of this millennium. Enron overstated profits and went out of business almost overnight. WorldCom reported expenses as assets and overstated both profits and assets. The same accounting firm, Arthur Andersen LLP, had audited both companies' financial statements. Arthur Andersen voluntarily closed its doors in 2002 after nearly 90 years in public accounting.

As the scandals unfolded, many people asked, "How could this happen? Where were the auditors?" To address public concern, Congress passed the **Sarbanes-Oxley Act**, abbreviated as **SOX**. This act requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports. SOX revamped corporate

Sarbanes-Oxley Act (SOX)
Requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports.

governance in the United States and affected the accounting profession. Here are some of the SOX provisions:

Internal Control Report
A report by management describing its responsibility for and the adequacy of internal controls over financial reporting.

1. Public companies must issue an **internal control report**, which is a report by management describing its responsibility for and the adequacy of internal controls over financial reporting. Additionally, an outside auditor must evaluate the client's internal controls and report on the internal controls as part of the audit report.
2. A new body, the Public Company Accounting Oversight Board (PCAOB), oversees the work of auditors of public companies.
3. Accounting firms are not allowed to audit a public company and also provide certain consulting services for the same client.
4. Stiff penalties await violators—25 years in prison for securities fraud and 20 years for an executive making false sworn statements.

IFRS

To be IFRS compliant, foreign companies are not required to issue an internal control report or have their internal controls audited by outside auditors. While all companies have internal controls, foreign companies do not have the added expense of an audit of their internal controls. On the other hand, readers of the financial reports of foreign companies have no assurance that the controls are effective.

The Sarbanes-Oxley Act changed the rules for auditors, limiting what services they can perform in addition to the audit and requiring a report on the internal controls of each public company audited. How does a business achieve good internal control? The next section identifies the components of internal control.

The Components of Internal Control

A business can achieve its internal control objectives by addressing the five components listed below:

- **C**ontrol procedures
- **R**isk assessment
- **I**nformation system
- **M**onitoring of controls
- **E**nvironment

You can remember the five components of internal control by using the acronym CRIME.

Control Procedures

Control procedures are designed to ensure that the business's goals are achieved. The next section, "Internal Control Procedures," discusses the procedures in greater detail.

Risk Assessment

A company must identify its risks. For example, food manufacturers face the risk that their food products may harm people; airplane carrier businesses face the possibility that planes may crash; music companies face copyright infringement risks; and all companies face the risk of bankruptcy. Companies facing difficulties might be tempted to falsify their financial statements to make themselves look better than they really are. As part of the internal control system, the company's business risk, as well as the risk concerning individual accounts, must be assessed. The higher the risk, the more controls a company must put in place to safeguard its assets and accounting records.

Information System

As we have seen, the information system is critical. Controls must be in place within the information system to ensure that only authorized users have access to various parts of the accounting information system. Additionally, controls must be in place to ensure adequate approvals for recorded transactions are required. The decision makers need accurate information to keep track of assets and measure profits and losses.

Monitoring of Controls

Companies hire auditors to monitor their controls. An **internal auditor** is an employee of the business who ensures that the company's employees are following company policies and that operations are running efficiently. Internal auditors also determine whether the company is following legal requirements for internal controls to safeguard assets. An **external auditor** is an outside accountant who is completely independent of the business. External auditors evaluate the controls to ensure that the financial statements are presented fairly, in accordance with Generally Accepted Accounting Principles (GAAP).

Internal Auditor
An employee of the business who ensures the company's employees are following company policies, that the company meets all legal requirements, and that operations are running efficiently.

External Auditor
An outside accountant, completly independent of the business, who evaluates the controls to ensure that the financial statements are presented fairly in accordance with GAAP.

Environment

The environment is the "tone at the top" or the culture of the business. It starts with the CFO or CEO and the top managers. They must behave honorably to set a good example for company employees. Each must demonstrate the importance of internal controls if he or she expects the employees to take the controls seriously.

ETHICS

Should the liabilities be reported?

Dudley Dorite, CPA, the lead external auditor of Needles Corporation, thinks that Needles may be understating the liabilities on its balance sheet. Needles's transactions are very complex, and outsiders may never figure this out. Dorite asks his CPA firm's audit standards committee how he should handle the situation. The CPA firm's committee replies, "Require Needles to report all its liabilities." Needles is Dorite's most important client, and Needles is pressuring him to certify the liabilities. Dorite can rationalize that Needles's amounts are okay. What should Dorite do? What would you do?

Solution

Dorite has three options. He can go along with Needles's liabilities as reported, he can persuade Needles to report higher amounts of liabilities, or, if Needles refuses, he can issue a qualified audit report. A qualified audit report is issued when the auditor disagrees with specific items on the financial statements. Dorite should understand that, when he prepares an audit report, his responsibility is to the investors and the public. He should follow the recommendation of the audit standards committee. If Dorite went along with misrepresenting the liabilities, he might keep a valuable client, but he could face problems in the future for not disclosing flaws in the presentation of liabilities on the balance sheet.

Internal Control Procedures

Whether the business is a small business that generates less than $10,000 in annual sales or a large business generating $10 billion in annual sales, all companies need the following internal control procedures:

Competent, Reliable, and Ethical Personnel

Employees should be competent, reliable, and ethical. Paying good salaries will attract high-quality employees. Employees should also be trained to do the job, and their work should be adequately supervised.

Assignment of Responsibilities

In a business with good internal controls, no duty is overlooked. Each employee has certain, carefully defined responsibilities. For example, in a large company, the person in charge of signing checks is called the *treasurer*. The chief accounting officer is called the *controller*. Even an entry-level bookkeeper, whose job includes recording accounting transactions accurately, has clear responsibilities. This assignment of responsibilities creates job accountability, thus ensuring all important tasks get done.

Separation of Duties

Separation of Duties
Dividing responsibilities between two or more people to limit fraud and promote accuracy of accounting records.

Smart management policies divide responsibilities between two or more people. **Separation of duties** limits fraud and promotes the accuracy of the accounting records. Separation of duties can be divided into two parts:

1. **Separating operations from accounting.** Accounting should be completely separate from the operating departments, such as production and sales. What would happen if sales personnel recorded the company's revenue? Sales figures could be inflated, and then top managers would not know how much the company actually sold.
2. **Separating the custody of assets from accounting.** Accountants must not handle cash, and cashiers must not have access to the accounting records. If one employee has both duties, that employee could steal cash and conceal the theft in the accounting records. The treasurer of a company handles cash, and the controller accounts for the cash. Neither person has both responsibilities. This control applies to all assets, not just cash.

Audits

To assess the adequacy and accuracy of their accounting records, most companies perform both internal and external audits. Remember that an audit is an examination of a company's financial statements and accounting system by a trained accounting professional called an auditor. Internal audits are performed by employees of the company. External audits are performed by independent auditors who are not employees of the company.

To evaluate the accounting system, auditors must examine the internal controls and test them to ensure the controls are working properly. For example, a control might require authorization by a manager for payments over $50. An auditor would check a sample of payments greater than $50 to determine whether all payments were properly authorized by a manager.

Documents

Documents provide the details of business transactions and include invoices and orders, which may be paper or electronic. Documents should be prenumbered to prevent theft and inefficiency. A gap in the numbered sequence draws attention.

For example, for Smart Touch Learning, a key document is the sales invoice. The manager can compare the total cash sales on the invoices with the amount of cash received and deposited into the bank account.

Electronic Devices

Accounting systems are relying less on paper documents and more on electronic documents and digital storage devices. For example, retailers control inventory by attaching an electronic sensor to merchandise. The cashier removes the sensor after a sale is made. If a customer tries to leave the store with the sensor attached, an alarm sounds. Devices such as these can significantly reduce theft.

E-Commerce

Encryption
Rearranging plain-text messages by a mathematical process—the primary method of achieving security in e-commerce.

Firewall
A device that enables members of a local network to access the network, while keeping nonmembers out of the network.

E-commerce creates its own unique types of risks. Hackers may gain access to confidential information, such as account numbers and passwords, or introduce computer viruses, Trojans, or phishing expeditions. To address the risks posed by e-commerce, companies have devised a number of security measures. One technique for protecting customer data is encryption. **Encryption** rearranges plain-text messages by a mathematical process. The encrypted message cannot be read by those who do not know the code. An accounting encryption example uses check-sum digits for account numbers. Each account number has its last digit equal to the sum of the previous digits. For example, consider customer number 2237, where $2 + 2 + 3 = 7$. Any account number failing this test triggers an error message.

Another technique for protecting data is firewalls. **Firewalls** limit access into a local network. Members can access the network, but nonmembers cannot. Usually several firewalls are built into the system. At the point of entry, additional security measures, such as passwords, PINs (personal identification numbers), and signatures are used. For additional security, more sophisticated firewalls are used deeper in the network to protect more sensitive data.

DECISIONS

What e-commerce internal controls should be put into place?

Jason Kane works as an information technology auditor for Netproducts, a retailer that sells merchandise over the Internet. Jason has been assigned the responsibility of reviewing the existing procedures and suggesting internal controls that could best protect the company. Netproducts sells all its merchandise over the Internet and accepts only credit card payments. Netproducts tracks trend information about its sales and maintains all customer, product, and pricing information on the company's intranet. In addition, Netproducts keeps employee information such as annual leave, payroll deposits, and Social Security numbers on its intranet. What e-commerce controls should Jason suggest?

Solution

Jason should suggest that specific controls be put into place, such as using encryption technology and firewalls, to protect customer and employee information. He should recommend that customers be required to create an online account with a password for the site and that the company only use secured Internet networks. In addition, Netproducts should ensure that the customer and employee data are physically secured and that access to the data can be obtained only by authorized individuals.

Other Controls

The types of other controls are as endless as the types of businesses that employ them. Some examples of other common controls include the following:

- Fireproof vaults to store important documents
- Burglar alarms, fire alarms, and security cameras
- Loss-prevention specialists who train company employees to spot suspicious activity
- Fidelity bonds to reimburse the company for any losses due to employee theft
- Mandatory vacations and job rotation

The Limitations of Internal Control—Costs and Benefits

Unfortunately, most internal controls can be overcome. **Collusion**—two or more people working together—can beat internal controls. For example, consider the following scenario with Galaxy Theater. Ralph and Lana, employees of Galaxy Theater, can design a scheme in which Ralph, the ticket seller, sells tickets and pockets the cash from 10 customers. Lana, the ticket taker, admits 10 customers to the theater without taking their tickets. Ralph and Lana split the cash. Ralph and Lana have colluded to circumvent controls, resulting in Galaxy Theater losing revenues. To prevent this situation, the manager must take additional steps, such as matching the number of people in the theater against the number of ticket stubs retained, which takes time away from the manager's other duties. It is difficult and costly to plan controls that can prevent collusion.

Collusion
Two or more people working together to circumvent internal controls and defraud a company.

The stricter the internal control system, the more it costs. A complex system of internal control can strangle the business with red tape. How tight should the controls be? Internal controls must always be judged in light of their costs versus their benefits. Following is an example of a positive cost–benefit relationship: A security guard at a retail store costs about $28,000 a year. On average, each guard prevents about $50,000 of theft each year. The net savings to the retail store is $22,000. An example of a negative cost–benefit relationship would be paying the same security guard $28,000 a year to guard a $1,000 cash drawer. The cost exceeds the benefit by $27,000.

So far we have discussed what internal control is and how it can be used to protect a company's assets. We will now spend the remainder of the chapter concentrating on cash because it is the asset most likely to be stolen. However, it is important to remember that internal controls should be applied to all assets, not just cash.

Try It!

Match the accounting terminology to the definitions.

1. Sarbanes-Oxley Act
2. Internal control
3. Encryption
4. Separation of duties
5. Internal auditors

a. Organizational plan and all the related measures adopted by an entity to safeguard assets, encourage employees to follow company policies, promote operational efficiency, and ensure accurate and reliable accounting records.

b. Employees of the business who ensure that the company's employees are following company policies and meeting legal requirements and that operations are running efficiently.

c. Rearranging plain-text messages by a mathematical process—the primary method of achieving security in e-commerce.

d. Requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports.

e. Dividing responsibilities between two or more people.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S7-1. MyAccountingLab

WHAT ARE THE INTERNAL CONTROL PROCEDURES WITH RESPECT TO CASH RECEIPTS?

Learning Objective 2
Apply internal controls to cash receipts

Cash receipts occur primarily when a business sells merchandise or services. All cash receipts should be deposited in the bank for safekeeping shortly after the cash is received. Companies receive cash either over the counter, through the mail, or by electronic funds transfer. Each source of cash has its own security measures. We have already discussed internal control procedures for e-commerce, so this section focuses on over-the-counter and mailed cash receipts.

Cash Receipts Over the Counter

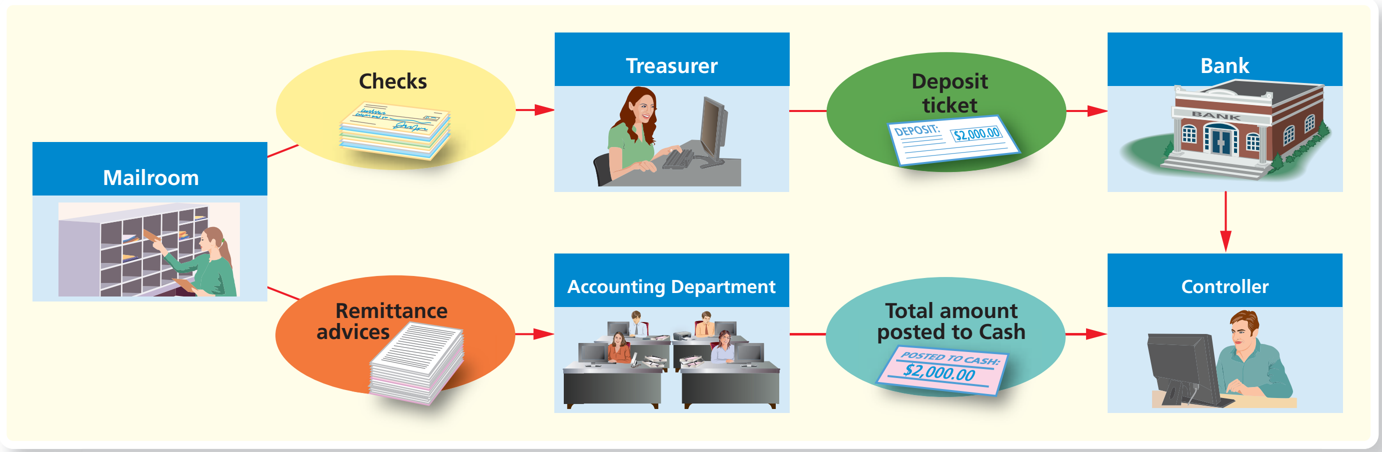
A cash receipt over the counter in a store involves a point-of-sale terminal (cash register) that provides control over the cash receipts. Consider a retail store. For each transaction, the retail store issues a receipt to ensure that each sale is recorded. The cash drawer opens after the clerk enters a transaction, and the machine (cash register) records it. At the end of the day, a manager proves the cash by comparing the cash in the drawer against the machine's record of cash sales. This step helps prevent theft by the clerk.

At the end of the day—or several times a day if business is brisk—the manager deposits the cash in the bank. The machine tape then goes to the accounting department to record the journal entry for cash receipts and sales revenue. These measures, coupled with oversight by a manager, discourage theft.

Cash Receipts by Mail

Many companies receive checks by mail for payments of services or merchandise. Checks sent via mail are considered to be cash receipts. Exhibit 7-1 shows how companies control cash received by mail.

Exhibit 7-1 | **Cash Receipts by Mail**



The process works like this:

Step 1: All incoming mail is opened by a mailroom employee. The mailroom then sends all customer checks to the treasurer and all remittance advices to the accounting department. A **remittance advice** is an optional attachment to a check that tells the business the reason for the payment.

Remittance Advice
An optional attachment to a check that tells the business the reason for the payment.

Step 2: The treasurer has the cashier deposit the checks in the bank. The cashier receives a deposit receipt.

Step 3: The accounting department (or bookkeeper) uses the remittance advices to record the journal entries to Cash and customer accounts.

Step 4: As a final control, the controller compares the following records for the day:

- Bank deposit amount from the treasurer
- Debit to Cash from the accounting department

The debit to Cash should equal the amount deposited in the bank. If it does, all cash receipts are safe in the bank, and the company's books are up to date.

Many companies use a **lock-box system** as an alternative to accepting cash or checks via the mail or over the counter. In a lock-box system, customers send their checks directly to a post office box that belongs to a bank. A bank employee empties the box daily and records the deposits into the company's bank account. Internal control is tight because company personnel never touch incoming cash. The lock-box system puts a business's cash into the company's bank account quickly.

Lock-Box System
A system in which customers send their checks to a post office box that belongs to a bank. A bank employee empties the box daily and records the deposits into the company's bank account.

Try It!

6. Fill in the missing information concerning how companies control cash received by mail.

a. The _________ opens the mail and sends customer checks to the treasurer.

b. The _________ deposits the customer checks in the bank.

c. The _________ uses the remittance advices to record the journal entries for cash receipts.

d. The _________ compares the bank deposit to the journal entry for cash receipts.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S7-2 and S7-3. MyAccountingLab

WHAT ARE THE INTERNAL CONTROL PROCEDURES WITH RESPECT TO CASH PAYMENTS?

Learning Objective 3
Apply internal controls to cash payments

Companies make many payments by check. They also pay small amounts from a petty cash fund, which is discussed later in the chapter. Let's begin by discussing cash payments by check.

Controls Over Payment by Check

Companies need a good separation of duties between the operations of the business and writing checks for cash payments. Payment by check is an important internal control for the following reasons:

- The check provides a record of the payment.
- The check must be signed by an authorized official.
- Before signing the check, the official reviews the invoice or other evidence supporting the payment.

Controls Over Purchases and Payments

To illustrate the internal control over cash payments by check, suppose Smart Touch Learning buys its tablets from an electronics manufacturer. The purchasing and payment process follows these steps, as shown in Exhibit 7-2.

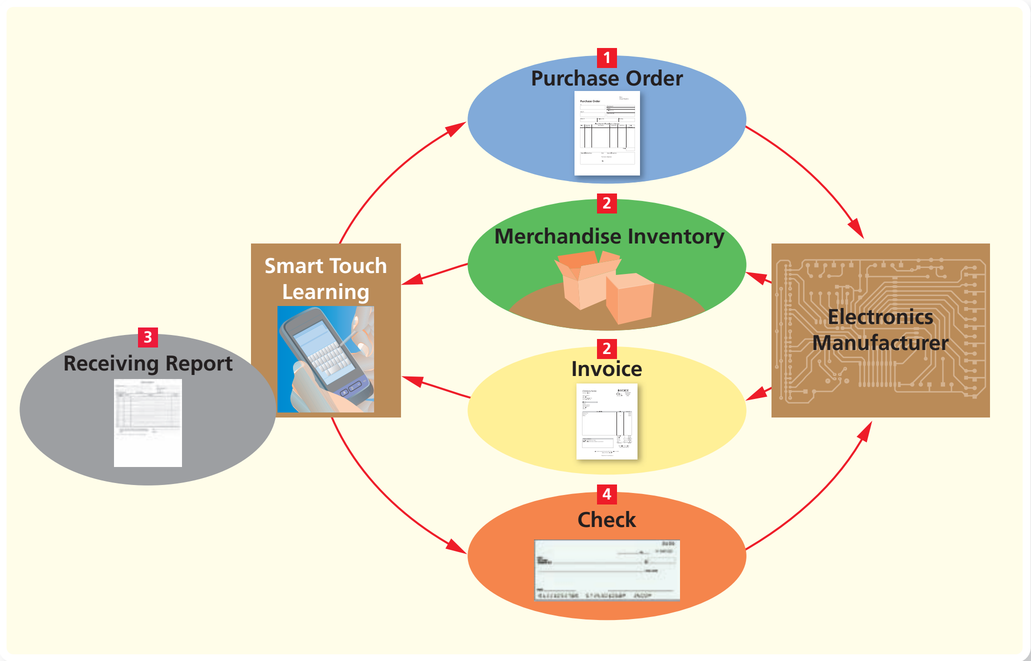
Step 1: Smart Touch Learning sends a purchase order to the electronics manufacturer that contains the quantity and type of goods needed.

Step 2: The electronics manufacturer ships the inventory and sends an invoice back to Smart Touch Learning.

Step 3: Smart Touch Learning receives the inventory and prepares a receiving report.

Step 4: After approving all documents, Smart Touch Learning sends a check to the electronics manufacturer.

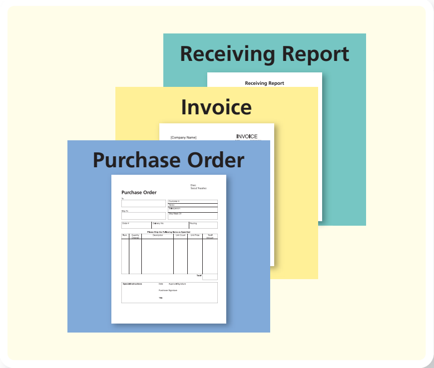
Exhibit 7-2 Cash Payments by Check



For good internal control, the purchasing agent (the employee who prepares the purchase order) should neither receive the goods nor approve the payment. If these duties are not separated, a purchasing agent could buy goods and have them shipped to his or her home. Or a purchasing agent could spend too much on purchases, approve the payment, and split the excess with the supplier.

Exhibit 7-3 shows Smart Touch Learning's payment packet of documents, which may be in either electronic or paper format. Before signing the check for payment of goods,

Exhibit 7-3 Payment Packet



the controller or the treasurer should examine the packet to prove that all the documents agree. Only then does the company know the following:

1. It received the goods ordered.
2. It is paying only for the goods received and authorized.
3. It is paying the correct amount.

After payment, the payment packet is marked as paid to prevent the bill from being paid twice. Electronically paid invoices are automatically marked "paid" by most accounting systems.

Streamlined Procedures

Evaluated Receipts Settlement (ERS)
A procedure that compresses the payment approval process into a single step by comparing the receiving report to the purchase order.

Electronic Data Interchange (EDI)
A streamlined process that bypasses paper documents altogether. Computers of customers communicate directly with the computers of suppliers to automate routine business transactions.

Technology is streamlining payment procedures. **Evaluated Receipts Settlement (ERS)** compresses the payment approval process into a single step by comparing the receiving report to the purchase order. If those documents match, then Smart Touch Learning got the tablets it ordered and payment is made to the vendor.

An even more streamlined process bypasses paper documents altogether. In **Electronic Data Interchange (EDI)**, a retailer's computers communicate directly with the computers of suppliers. When the retailer's inventory reaches a low level, the computer creates and sends an electronic purchase order to the supplier. The supplier then ships the inventory and electronically sends an invoice to the retailer. A manager approves the invoice, and then an electronic fund transfer (EFT) sends the retailer's payment to the supplier. These streamlined EDI procedures are used for both cash payments and cash receipts in many companies.

Try It!

7. Fill in the missing information.
   - **a.** The vendor ships the inventory and sends a(n) _________ back to the purchaser.
   - **b.** After approving all documents, the purchaser sends a(n) _________ to the vendor.
   - **c.** When ordering merchandise inventory, the purchaser sends a(n) _________ to the vendor.
   - **d.** The purchaser receives the inventory and prepares a(n) _________.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S7-4. MyAccountingLab

HOW CAN A PETTY CASH FUND BE USED FOR INTERNAL CONTROL PURPOSES?

Learning Objective 4
Explain and journalize petty cash transactions

Petty Cash
A fund containing a small amount of cash that is used to pay for minor expenditures.

It is not cost effective for a business to write a check for a taxi fare or the delivery of a package across town. To meet these needs and to streamline record keeping for small cash transactions, companies keep cash on hand to pay small amounts. This fund is called **petty cash**.

We have already established that cash is the most liquid of assets. Petty cash is more liquid than cash in the bank because none of the bank controls are in place. Therefore, petty cash needs controls such as the following:

- Designate a custodian of the petty cash fund. The custodian is the individual assigned responsibility for the petty cash fund.
- Designate a specific amount of cash to be kept in the petty cash fund.
- Support all petty cash fund payments with a petty cash ticket. These tickets are sequentially numbered. The petty cash ticket serves as an authorization voucher and explanation.

Setting Up the Petty Cash Fund

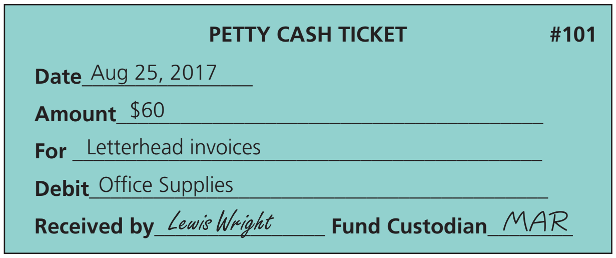
The petty cash fund is opened when the company writes a check for the designated amount. The company makes the check payable to Petty Cash. Suppose on August 1, Smart Touch Learning creates a petty cash fund of $200. The custodian cashes the $200 check and places the currency in the fund box. The journal entry is as follows:

Date	Accounts and Explanation	Debit	Credit
Aug. 1	Petty Cash	200	
	Cash		200
	To open the petty cash fund.		

A↑↓		L + E
Petty Cash↑ Cash↓	=	

For each petty cash payment, the custodian prepares a petty cash ticket like the one in Exhibit 7-4.

Exhibit 7-4 Petty Cash Ticket



PETTY CASH TICKET **#101**

Date Aug 25, 2017

Amount $60

For Letterhead invoices

Debit Office Supplies

Received by Lewis Wright **Fund Custodian** MAR

Signatures (or initials) identify the recipient of the cash and the fund custodian. The custodian keeps the petty cash tickets in the fund box. The sum of the cash plus the total of the petty cash tickets should equal the fund balance, $200, at all times.

Maintaining the Petty Cash account at its designated balance is the nature of an **imprest system**. The imprest system requires that, at any point in time, the petty cash box contain cash and petty cash tickets that total the amount of the imprest balance. This clearly identifies the amount of cash for which the custodian is responsible, and it is the system's main internal control feature.

Imprest System
A way to account for petty cash by maintaining a constant balance in the petty cash account. At any time, cash plus petty cash tickets must total the amount allocated to the petty cash fund.

Replenishing the Petty Cash Fund

Payments decrease the fund, so periodically the fund must be replenished. Suppose that on August 31 the petty cash fund holds $118 in cash and $80 in petty cash tickets (ticket #101 for $60 for office supplies and ticket #102 for $20 for a delivery).

You can see $2 is missing:

Fund balance		$ 200
Cash on hand	$ 118	
Petty cash tickets	80	
Total accounted for		198
Amount of cash missing		$ 2

To replenish the petty cash fund, you need to bring the cash on hand up to $200. The company writes a check, payable to Petty Cash, for $82 ($200 imprest balance – $118 cash on hand). The fund custodian cashes this check and puts $82 back in the fund box. Now the fund box holds $200 cash as it should.

The petty cash tickets tell you what to debit and the check amount tells you what to credit, as shown in this entry to replenish the fund:

A↓		L	+	E↓
Office Supplies↑ Cash↓	=			Delivery Expense↑ Cash Short & Over↑

Date	Accounts and Explanation	Debit	Credit
Aug. 31	Office Supplies	60	
	Delivery Expense	20	
	Cash Short & Over	2	
	Cash		82
	To replenish the petty cash fund.		

Missing petty cash funds are debited to a new account, Cash Short & Over. In this case, $2 was missing, so we debit Cash Short & Over for the missing petty cash. Another way to look at this is that we needed another $2 debit to make the journal entry balance.

Why wasn't Petty Cash debited when the fund was replenished?

The Petty Cash account keeps its $200 balance at all times. **The Petty Cash account is used in a journal entry only when the fund is started (see the August 1 entry) or when its amount is increased or decreased.** If the business increases the fund amount from $200 to $250, this would require a check to be cashed for $50 and the debit would be to Petty Cash. **When replenishing the fund, the company debits either the associated expense incurred or the asset purchased with the funds.**

At times the sum of cash in the petty cash fund plus the tickets may exceed the fund balance. Consider the previous example. Assume the petty cash ticket #102 for delivery was for $30 instead of $20. Because we know the amount of the petty cash tickets and the amount of cash on hand, we can find out the amount of cash shortage or overage.

Fund balance		$ 200
Cash on hand	$ 118	
Petty cash tickets	90	
Total accounted for		208
Amount of cash overage		$ 8

In this case, the cash on hand plus petty cash tickets ($208) is more than the fund balance ($200). A cash overage exists. The journal entry to replenish the fund would be:

A↓		L	+	E↓
Office Supplies↑ Cash↓	=			Delivery Expense↑ Cash Short & Over↓

Date	Accounts and Explanation	Debit	Credit
Aug. 31	Office Supplies	60	
	Delivery Expense	30	
	Cash Short & Over		8
	Cash		82
	To replenish the petty cash fund.		

We know the total debits are $90 ($60 + $30). We know the check to replenish the fund was still $82 (credit to Cash) because the fund balance should total $200 and there was $118 in the petty cash box. For this situation, we need an $8 credit to make the journal entry balance, a gain, which is credited to Cash Short & Over.

Changing the Amount of the Petty Cash Fund

Suppose that on September 1, Smart Touch Learning decides to increase the amount of the petty cash fund from $200 to $300. In order to increase the fund, Smart Touch Learning must write a check for the additional $100, cash the check, and place the additional currency in the petty cash box. Because the amount of the fund has changed, the company must record the following journal entry showing this change:

Date	Accounts and Explanation	Debit	Credit
Sep. 1	Petty Cash	100	
	Cash		100
	To increase the petty cash fund.		

A↑↓		L	+	E
Petty Cash↑ Cash↓	=			

Had the Petty Cash fund been decreased, the debit would've been to Cash and the credit to the Petty Cash account. Remember that the only time the Petty Cash account is used in the journal entry is when the account is established, increased, or decreased.

Try It!

8. The following petty cash transactions of Green Golf Equipment occurred in May:

May 1	Established a petty cash fund with a $200 balance.
31	The petty cash fund has $18 in cash and $180 in petty cash tickets that were issued to pay for Office Supplies ($81), Delivery Expense ($36), Postage Expense ($54), and Miscellaneous Expense ($9). The petty cash custodian replenished the fund and recorded the expenses.

Prepare the journal entries.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S7-5. MyAccountingLab

HOW CAN THE BANK ACCOUNT BE USED AS A CONTROL DEVICE?

Learning Objective 5

Demonstrate the use of a bank account as a control device and prepare a bank reconciliation and related journal entries

Cash is the most liquid asset reported on the balance sheet because it is the medium of exchange. Because cash is easy to conceal and relatively easy to steal, businesses keep their cash in a bank account. The bank has established practices for safeguarding the business's money. This section identifies the most common controls applied to a bank account.

Signature Card

Banks require each person authorized to sign on an account to provide a **signature card**. This helps protect against forgery because the signature card should be checked frequently by bank personnel to authenticate written checks or deposits made by the business.

Signature Card
A card that shows each authorized person's signature for a bank account.

Deposit Ticket

Banks supply standard forms such as a deposit ticket. Completed by the customer, the **deposit ticket** shows the amount of each deposit. As proof of the transaction, the customer receives a deposit receipt from the bank.

Deposit Ticket
A bank form that is completed by the customer and shows the amount of each deposit.

Check

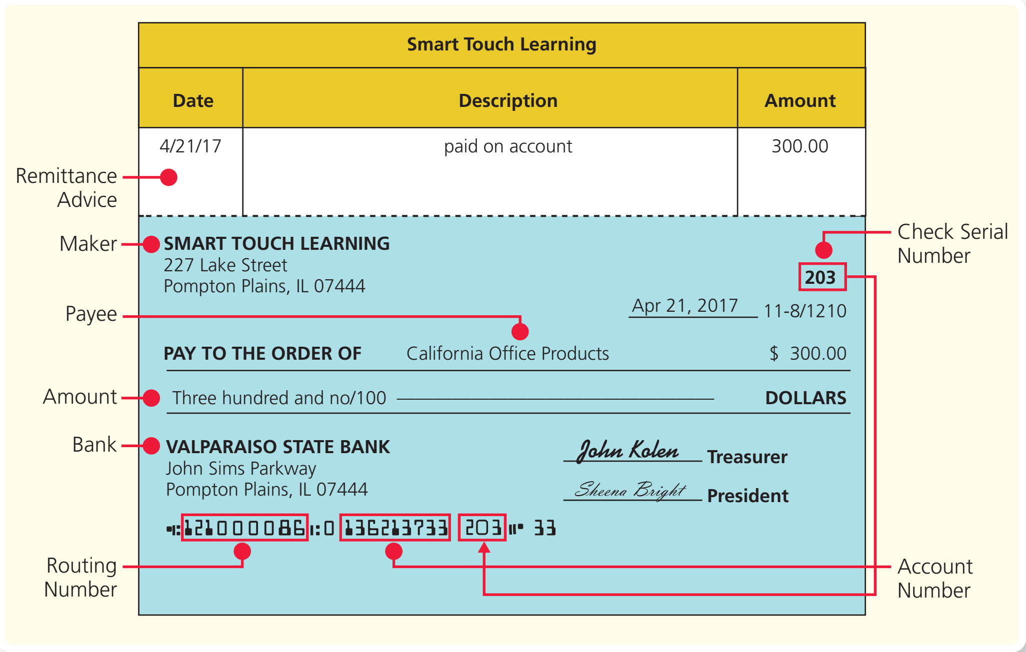
To pay cash, the depositor writes a **check**, which is a prenumbered document that tells the bank to pay the designated party a specified amount. Exhibit 7-5 shows a check drawn by Smart Touch Learning. There are three parties to a check: the maker, payee, and bank. The **maker** is the issuer of the check, in this case, Smart Touch Learning. The **payee** (California Office Products) is the individual or business to whom the check is paid.

Check
A document that instructs a bank to pay the designated person or business a specified amount of money.

Maker
The party who issues the check.

Payee
The individual or business to whom the check is paid.

Exhibit 7-5 | **Check with Remittance Advice**



Smart Touch Learning

Date	Description	Amount
4/21/17	paid on account	300.00

SMART TOUCH LEARNING
227 Lake Street
Pompton Plains, IL 07444

203

Apr 21, 2017 11-8/1210

PAY TO THE ORDER OF California Office Products $ 300.00

Three hundred and no/100 **DOLLARS**

VALPARAISO STATE BANK
John Sims Parkway
Pompton Plains, IL 07444

John Kolen **Treasurer**

Sheena Bright **President**

⑆121000086⑆0 136213733 203⑈ 33

An easy way to remember the difference between the maker and the payee is the maker is the party who is making the promise that the cash is available in the bank to settle the check.

This check has two parts, the check itself and the remittance advice. In addition, the check includes the routing number and account number. The **routing number** is a 9-digit number that identifies the bank upon which the payment is drawn. The **account number** identifies the account upon which the payment is drawn.

Routing Number
On a check, the 9-digit number that identifies the bank upon which the payment is drawn.

Account Number
On a check, the number that identifies the account upon which the payment is drawn.

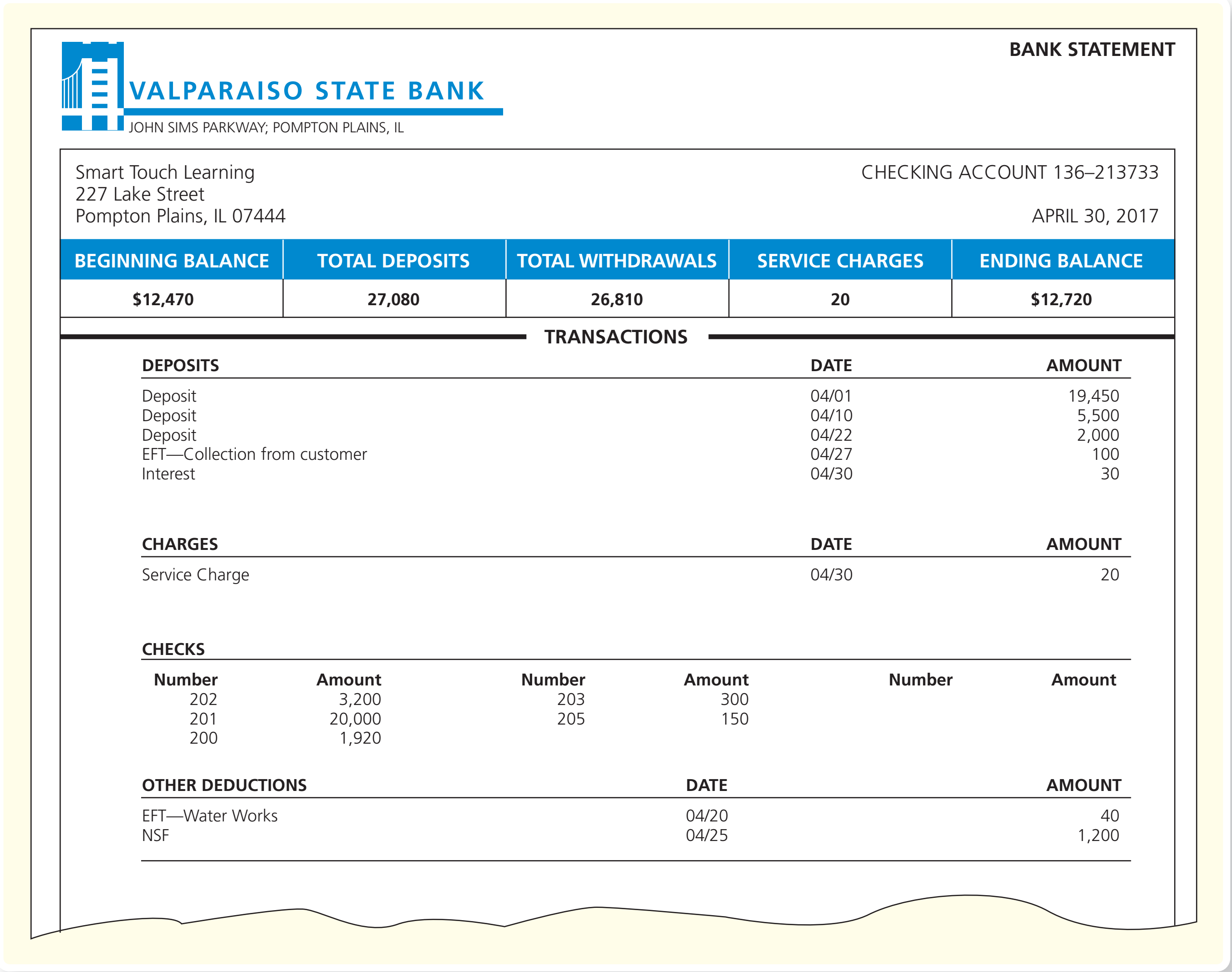
Bank Statement

Banks send monthly statements to customers either electronically or in the mail. A **bank statement** reports the activity in the customer's account. The statement shows the account's beginning and ending balances, cash receipts, and cash payments. Included with the statement sometimes are physical or scanned copies of the maker's **canceled checks**, the checks written by the maker that have been cashed (paid) by the bank. Exhibit 7-6 is the April 30, 2017 bank statement of Smart Touch Learning.

Bank Statement
A document from the bank that reports the activity in the customer's account. It shows the bank account's beginning and ending balances and lists the month's cash transactions conducted through the bank account.

Canceled Checks
Physical or scanned copies of the maker's cashed (paid) checks.

Exhibit 7-6 | **Bank Statement**



BANK STATEMENT

VALPARAISO STATE BANK
JOHN SIMS PARKWAY; POMPTON PLAINS, IL

Smart Touch Learning
227 Lake Street
Pompton Plains, IL 07444

CHECKING ACCOUNT 136–213733
APRIL 30, 2017

BEGINNING BALANCE	TOTAL DEPOSITS	TOTAL WITHDRAWALS	SERVICE CHARGES	ENDING BALANCE
$12,470	27,080	26,810	20	$12,720

TRANSACTIONS

DEPOSITS	DATE	AMOUNT
Deposit	04/01	19,450
Deposit	04/10	5,500
Deposit	04/22	2,000
EFT—Collection from customer	04/27	100
Interest	04/30	30

CHARGES	DATE	AMOUNT
Service Charge	04/30	20

CHECKS

Number	Amount	Number	Amount	Number	Amount
202	3,200	203	300		
201	20,000	205	150		
200	1,920				

OTHER DEDUCTIONS	DATE	AMOUNT
EFT—Water Works	04/20	40
NSF	04/25	1,200

Electronic Funds Transfers

Electronic funds transfer (EFT) moves cash by electronic communication. Many bills and other payments, such as salaries, rent, utilities, and insurance, are now paid by EFT. It is much cheaper to pay these items by EFT without having to mail a check. Debit card transactions and direct deposits are also considered EFTs.

Electronic Funds Transfer (EFT)
A system that transfers cash by electronic communication rather than by paper documents.

Bank Reconciliation

Bank Reconciliation
A document explaining the reasons for the difference between a depositor's cash records and the depositor's cash balance in its bank account.

The **bank reconciliation** compares and explains the differences between cash on the company's books and cash according to the bank's records on a specific date. There are two records of a business's cash:

1. The Cash account in the company's general ledger. April's Cash T-account for Smart Touch Learning is shown below.

Cash

Beg. Bal.	10,550	20,000	Apr. 2
Apr. 1	19,450	3,200	Apr. 15
Apr. 8	5,500	300	Apr. 21
Apr. 22	2,000	2,000	Apr. 30
Apr. 24	9,000	150	Apr. 30
End. Bal.	20,850		

2. The bank statement, which shows the cash receipts and payments transacted through the bank. In Exhibit 7-6, however, the bank shows an ending balance of $12,720 for Smart Touch Learning.

Timing Difference
Difference that arises between the balance on the bank statement and the balance on the company's books because of a time lag in recording transactions.

The books and the bank statement usually show different cash balances. Differences may arise because of a time lag in recording transactions, called **timing differences**. Three examples of timing differences follow:

- When a business writes a check, it immediately deducts the amount in its checkbook and Cash account. The bank, however, does not subtract the check from the company's account until the bank pays the check a few days later.
- When a company deposits cash in its account, it immediately adds the cash receipt to the checkbook and Cash account. The bank, however, may take a day or two to add deposits to the company's balance.
- EFT cash payments and EFT cash receipts are often recorded by the bank before a company learns of them.

To obtain accurate cash records, a company must update its Cash account after the company receives its bank statement. A bank reconciliation is used to carry out the updating process. The bank reconciliation explains all differences between the company's cash records and the bank's records of the company's balance. The person who prepares the bank reconciliation should have no other cash duties. This means the reconciler should not be a person who has access to cash or duties that require journalizing cash transactions. Otherwise, he or she could steal cash and manipulate the reconciliation to conceal the theft.

Preparing the Bank Side of the Bank Reconciliation

Here are the items that appear on the bank side of the bank reconciliation. They all cause differences between the bank balance and the book balance.

The bank side contains items not yet recorded by the bank but recorded by the company or errors made by the bank. These items include the following:

Deposit in Transit
A deposit recorded by the company but not yet by its bank.

Outstanding Check
A check issued by a company and recorded on its books but not yet paid by its bank.

Deposits in Transit (Outstanding Deposits) A **deposit in transit** has been recorded and has already been added to the company's book balance, but the bank has not yet recorded it. These are shown as "Add: Deposits in transit" on the bank side because when the bank does record these deposits, it will increase the bank balance.

Outstanding Checks An **outstanding check** is a check that has been recorded and has already been deducted from the company's book balance, but the bank has not yet paid (deducted) it. Such checks are shown as "Less: Outstanding checks" on the bank side because when the bank does make payment for the checks, it will decrease the bank balance.

Bank Errors Bank errors are posting errors made by the bank that either incorrectly increase or decrease the bank balance. All bank errors are corrected on the bank side of the reconciliation by reversing the effect of the errors.

Errors are always recorded on the side of the reconciliation of the party that made the error. If the bank made the error, it is recorded on the bank side. If the business made the error, it is recorded on the book side.

Preparing the Book Side of the Bank Reconciliation

The book side contains items not yet recorded by the company on its books but that have been recorded by the bank or errors made by the company. Items to show on the book side include the following:

Bank Collections Bank collections are cash receipts the bank has received and recorded for a company's account but that the company has not recorded yet on its books. An example of a bank collection would occur when a business has its customers use a lock-box system. Another example is a bank collecting on a note receivable for a business. A bank collection is often referred to as a credit memorandum. A **credit memorandum** indicates that the customer's account has been increased. A bank collection (which increases the bank balance) that appears on the bank statement will show as "Add: Bank collections" on the book side of the reconciliation because it represents cash receipts not yet recorded by the company.

Credit Memorandum
An increase in a bank account.

Electronic Funds Transfers The bank may receive or pay cash on a company's behalf. An EFT may be a cash receipt or a cash payment. These will either show up on the book side of the reconciliation as "Add: EFT" for receipts not yet added to the company's books or "Less: EFT" for payments not yet deducted on the company's books.

Service Charge This cash payment is the bank's fee for processing a company's transactions. Service charges can also include the cost of printed checks and other bank fees such as ATM fees. A service charge is often referred to as a **debit memorandum** and represents a decrease in the bank account. This will show as "Less: Service charges" on the book side of the reconciliation because it represents a cash payment not yet subtracted from the company's cash balance.

Debit Memorandum
A decrease in a bank account.

Interest Revenue on a Checking Account A business will sometimes earn interest if it keeps enough cash in its account. The bank statement tells the company of this cash receipt. This will show as "Add: Interest revenue" on the book side of the reconciliation because it represents cash receipts not yet added in the company's cash balance.

Nonsufficient Funds (NSF) Checks **Nonsufficient funds (NSF) checks** represent checks received from customers for payment of services rendered or merchandise sold that have turned out to be worthless. NSF checks (sometimes called *hot checks* or *bad checks*) are treated as subtractions on a company's bank reconciliation. NSF checks are customer checks the company has received and deposited for which the customer doesn't have enough money in his or her bank account to cover. NSF checks will show as "Less: NSF checks" on the book side of the reconciliation, as the company previously recorded this receipt as an increase in cash, which now has to be deducted as the funds were not actually received.

Nonsufficient Funds (NSF) Check
A check for which the maker's bank account has insufficient money to pay the check.

Book Errors Book errors are errors made on the books of the company that either incorrectly increase or decrease the cash balance in the company's general ledger. All book errors are corrected on the book side of the reconciliation by reversing the effect of the errors.

Completing the Bank Reconciliation

The bank statement in Exhibit 7-6 shows that the April 30 bank balance of Smart Touch Learning is $12,720 (upper-right corner). However, the company's Cash account has a balance of $20,850. This situation calls for a bank reconciliation to explain the difference. In completing the bank reconciliation, Smart Touch Learning will review the bank statement and the business's Cash account to determine the timing differences. Exhibit 7-7, Panel A, lists the reconciling items for your easy reference, and Panel B shows the completed reconciliation.

Exhibit 7-7 | **Bank Reconciliation**

PANEL A—Reconciling Items

Bank side:

1. Deposit in transit, Apr. 24, $9,000.
2. Outstanding check no. 204, $2,000.

Book side:

3. EFT receipt from customer, $100.
4. Interest revenue earned on bank balance, $30.
5. Bank service charge, $20.
6. EFT payment of water bill, $40.
7. NSF check, $1,200.

PANEL B—Bank Reconciliation

SMART TOUCH LEARNING
Bank Reconciliation
April 30, 2017

BANK		BOOK		
Balance, April 30, 2017	$ 12,720	Balance, April 30, 2017		$ 20,850
ADD:		ADD:		
1. Deposit in transit	9,000	3. EFT receipt from customer	$ 100	
	21,720	4. Interest revenue earned on bank balance	30	130
				20,980
LESS:		LESS:		
		5. Service charge	20	
2. Outstanding checks		6. EFT payment of water bill	40	
No. 204	2,000	7. NSF check	1,200	1,260
Adjusted bank balance, April 30, 2017	**$ 19,720**	Adjusted book balance, April 30, 2017		**$ 19,720**

These amounts must agree.

SUMMARY OF THE VARIOUS RECONCILING ITEMS:

BANK BALANCE—ALWAYS

- *Add* deposits in transit.
- *Subtract* outstanding checks.
- *Add* or *subtract* corrections of bank errors.

BOOK BALANCE—ALWAYS

- *Add* bank collections, interest revenue, and EFT receipts.
- *Subtract* service charges, NSF checks, and EFT payments.
- *Add* or *subtract* corrections of book errors.

Examining a Bank Reconciliation

Let's go through each side of the bank reconciliation for Smart Touch Learning.

Bank Side of the Reconciliation

Smart Touch Learning begins by recording the bank balance as of April 30, 2017, which is taken from the bank statement, $12,720. The business then identifies any additions or subtractions affecting the bank balance:

1. **Deposit in transit.** Smart Touch Learning reviews the bank statement and the Cash account to determine whether any cash deposits made by the business have not yet been recorded by the bank. Smart Touch Learning identifies that the deposit made on April 24 for $9,000 has not yet been recorded by the bank. This amount is added to the bank balance.
2. **Outstanding check.** The business reviews the canceled checks included with the statement to determine whether any checks written by the business have not yet cleared the bank. Smart Touch Learning identifies check number 204 for $2,000 as outstanding. This amount is subtracted from the bank balance.

After all items affecting the bank side have been identified, the adjusted bank balance is determined.

Book Side of the Reconciliation

The book side of the reconciliation begins by Smart Touch Learning listing the Cash account balance as of April 30, 2017. This amount—$20,850—is found in the general ledger. Next, Smart Touch Learning reviews the Cash account and bank statement for items that affect the company's Cash account balance but are not recorded by the company:

3. **Electronic funds transfer (EFT).** In reviewing the bank statement, Smart Touch Learning identifies an EFT receipt from a customer in the amount of $100. The company has not recorded this receipt in the Cash account; therefore, it will need to be added to the book balance.
4. **Interest revenue.** Smart Touch Learning identifies a $30 deposit on the bank statement for interest earned that has not yet been recorded in the Cash account. This deposit will be added to the book balance.
5. **Service charge.** The bank statement shows a $20 service charge. Smart Touch Learning has not recorded this charge in the company's Cash account and will, therefore, need to subtract this amount from the book balance.
6. **Electronic funds transfer (EFT).** Listed in the other deductions section on the bank statement, Smart Touch Learning identifies an EFT payment to Water Works for $40. This payment has not been recorded in the company's Cash account. Smart Touch Learning will subtract this amount from the book balance.
7. **Nonsufficient funds (NSF) check.** Smart Touch Learning identifies an NSF check from a customer on the bank statement. The company had recorded the receipt of this check as an increase to cash originally. The bank has now communicated that the customer's check did not clear and that the customer's payment was never deposited into the business's account. Smart Touch Learning must subtract this amount from the book balance.

After recording all of the items that affect the book balance, Smart Touch Learning determines the adjusted book balance and verifies that it equals the adjusted bank balance. This amount represents the correct cash balance as of April 30, 2017.

Journalizing Transactions from the Bank Reconciliation

The bank reconciliation is an accountant's tool separate from the journals and ledgers. It does *not* account for transactions in the journal. To get the transactions into the accounts, we must make journal entries and post to the ledger. All items on the book side of the bank reconciliation require journal entries. We make no journal entries from the items on the bank side because we have already recorded these items in the business's Cash account.

The bank reconciliation in Exhibit 7-7 requires Smart Touch Learning to make journal entries to bring the Cash account up to date. Numbers in the journal entries correspond to the reconciling items listed in Exhibit 7-7, Panel A, and to the book side of the reconciliation in Panel B. Note that we chose to list each item in a separate journal entry here, but one compound entry could be made instead of the five separate entries illustrated.

A↑↓		L	+	E
Cash↑ Accounts Receivable↓	=			

A↑		L	+	E↑
Cash↑	=			Interest Revenue↑

A↓		L	+	E↓
Cash↓	=			Bank Expense↑

A↓		L	+	E↓
Cash↓	=			Utilities Expense↑

A↑↓		L	+	E
Accounts Receivable↑ Cash↓	=			

Date	Accounts and Explanation	Debit	Credit
3: Apr. 30	Cash	100	
	Accounts Receivable		100
	To record account receivable collected by bank.		
4: 30	Cash	30	
	Interest Revenue		30
	To record interest earned on bank balance.		
5: 30	Bank Expense	20	
	Cash		20
	To record bank service charges incurred.		
6: 30	Utilities Expense	40	
	Cash		40
	To record payment of water bill by EFT.		
7: 30	Accounts Receivable	1,200	
	Cash		1,200
	NSF check returned by bank.		

Cash

Beg. Bal.	10,550	20,000	Apr. 2
Apr. 1	19,450	3,200	Apr. 15
Apr. 8	5,500	300	Apr. 21
Apr. 22	2,000	2,000	Apr. 30
Apr. 24	9,000	150	Apr. 30
Bal.	20,850		
Apr. 30	100	20	Apr. 30
Apr. 30	30	40	Apr. 30
		1,200	Apr. 30
End. Bal.	19,720		

Try It!

For each of the following items, determine whether the item would be:

a. added to the bank balance
b. subtracted from the bank balance
c. added to the book balance
d. subtracted from the book balance

9. Interest revenue earned
10. NSF check
11. Deposit in transit
12. Service charge
13. Outstanding check

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S7-6 through S7-9. MyAccountingLab

HOW CAN THE CASH RATIO BE USED TO EVALUATE BUSINESS PERFORMANCE?

Cash is an important part of every business. Without an adequate supply of available cash, businesses cannot continue to operate. Businesses, therefore, monitor cash very carefully. One measure that can be used to measure a company's liquidity is the cash ratio. The **cash ratio** helps to determine a company's ability to meet its short-term obligations. It is calculated as follows:

Learning Objective 6
Use the cash ratio to evaluate business performance

Cash Ratio
A measure of a company's ability to pay current liabilities from cash and cash equivalents: (Cash + Cash equivalents) / Total current liabilities.

Cash ratio = (Cash + Cash equivalents) / Total current liabilities

Notice that the cash ratio includes cash and cash equivalents. **Cash equivalents** are highly liquid investments that can be converted into cash in three months or less. Examples of cash equivalents are money-market accounts and investments in U.S. government securities.

Cash Equivalent
A highly liquid investment that can be converted into cash in three months or less.

Returning to **Green Mountain Coffee Roasters, Inc.**, let's evaluate the company's liquidity using the cash ratio. Green Mountain's cash and cash equivalents and total current liabilities can be found on the balance sheet located in Appendix A and are presented below (shown in thousands):

	September 28, 2013	September 29, 2012
Cash and cash equivalents	$ 260,092	$ 58,289
Total current liabilities	597,063	519,987

Green Mountain's cash ratio as of September 28, 2013, follows:

Cash ratio = $260,092 / $597,063 = 0.44*

* rounded

In comparison, the cash ratio as of September 29, 2012, was:

Cash ratio = $58,289 / $519,987 = 0.11

The cash ratio has quadrupled from 2012 to 2013 due to an increase in available cash and cash equivalents. This ratio is the most conservative valuation of liquidity because it looks at only cash and cash equivalents, leaving out other current assets such as merchandise inventory and accounts receivable. Notice that for both years the cash ratio was below 1.0. Having a cash ratio below 1.0 is a good thing. A cash ratio above 1.0 might signify that the company has an unnecessarily large amount of cash supply. This cash could be used to generate higher profits or be paid out for dividends. However, a very low ratio doesn't send a strong message to investors and creditors that the company has the ability to repay its short-term debt.

Try It!

14. The Scott Sun & Shade Company had the following financial data at December 31, 2016:

Cash and cash equivalents	$ 60,000
Total current liabilities	75,000

What is the cash ratio as of December 31, 2016, for Scott Sun & Shade?

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S7-10. MyAccountingLab

REVIEW

> Things You Should Know

1. What is internal control, and how can it be used to protect a company's assets?

- Internal control is the organizational plan and all the related measures designed to safeguard assets, encourage employees to follow company policies, promote operational efficiency, and ensure accurate and reliable accounting records.
- The Sarbanes-Oxley Act was passed by Congress to revamp corporate governance in the United States.
- Internal control includes five components: control procedures, risk assessment, information system, monitoring of controls, and environment.

2. What are the internal control procedures with respect to cash receipts?

- A point-of-sale terminal provides control over cash receipts over the counter.
- Companies control cash by mail by ensuring appropriate separation of duties when handling cash and recording the transaction.

3. What are the internal control procedures with respect to cash payments?

- Good separation of duties between operations of the business and writing checks for cash payments should exist.
- Many companies use technology to make secure payments.

4. How can a petty cash fund be used for internal control purposes?

- A petty cash fund allows a business to keep cash on hand to pay for small miscellaneous items such as postage, office supplies, and taxi fares.
- When the petty cash fund is established, the company records a debit to Petty Cash and a credit to Cash.
- The petty cash fund is replenished by debiting the associated asset and expense accounts and crediting Cash.
- Discrepancies in petty cash funds are either debited or credited to the Cash Short & Over account.

5. How can the bank account be used as a control device?

- Bank accounts provide established practices that safeguard a business's money. These controls include use of signature cards, deposit tickets, checks, bank statements, and electronic funds transfers.
- A bank reconciliation can also be used as a form of internal control. The bank reconciliation compares and explains the difference between cash on the company's books and cash according to the bank's records on a specific date.
- After the bank reconciliation has been prepared, journal entries must be completed for all items on the book side of the bank reconciliation.

6. How can the cash ratio be used to evaluate business performance?

- The cash ratio measures a company's ability to pay its current liabilities from cash and cash equivalents.
- Cash ratio = (Cash + Cash equivalents) / Total current liabilities.

> Summary Problem 7-1

Misler Corporation established a $300 petty cash fund on January 12, 2016. Karen Misler (KM) is the fund custodian. At the end of the month, the petty cash fund contains the following:

- **a.** Cash: $163
- **b.** Petty cash tickets, as follows:

No.	Amount	Issued to	Signed by	Account Debited
44	$ 14	B. Jarvis	B. Jarvis and KM	Office Supplies
45	39	S. Bell	S. Bell	Delivery Expense
47	43	R. Tate	R. Tate and KM	—
48	33	L. Blair	L. Blair and KM	Travel Expense

Requirements

1. Identify three internal control weaknesses revealed in the given data.
2. Journalize the following transactions:
   - **a.** Establishment of the petty cash fund on January 12, 2016.
   - **b.** Replenishment of the fund on January 31, 2016. Assume petty cash ticket no. 47 was issued for the purchase of office supplies.
3. What is the balance in the Petty Cash account immediately before replenishment? Immediately after replenishment?

> Solution

Requirement 1

The three internal control weaknesses are as follows:

1. Petty cash ticket no. 46 is missing. There is no indication of what happened to this ticket. The company should investigate.
2. The petty cash custodian (KM) did not sign petty cash ticket no. 45. This omission may have been an oversight on her part. However, it raises the question of whether she authorized the payment. Both the fund custodian and the recipient of the cash should sign the petty cash ticket.
3. Petty cash ticket no. 47 does not indicate which account to debit on the actual ticket. If Tate or Karen Misler do not remember where the $43 went, then the accountant will not know what account should be debited.

Requirement 2

Petty cash journal entries:

- **a.** Entry to establish the petty cash fund:

Date	Accounts and Explanation	Debit	Credit
Jan. 12	Petty Cash	300	
	Cash		300
	To open the petty cash fund.		

b. Entry to replenish the fund:

Date	Accounts and Explanation	Debit	Credit
Jan. 31	Office Supplies	57	
	Delivery Expense	39	
	Travel Expense	33	
	Cash Short & Over	8	
	Cash		137
	To replenish the petty cash fund.		

Requirement 3

The balance in the Petty Cash account is *always* its imprest balance, in this case $300.

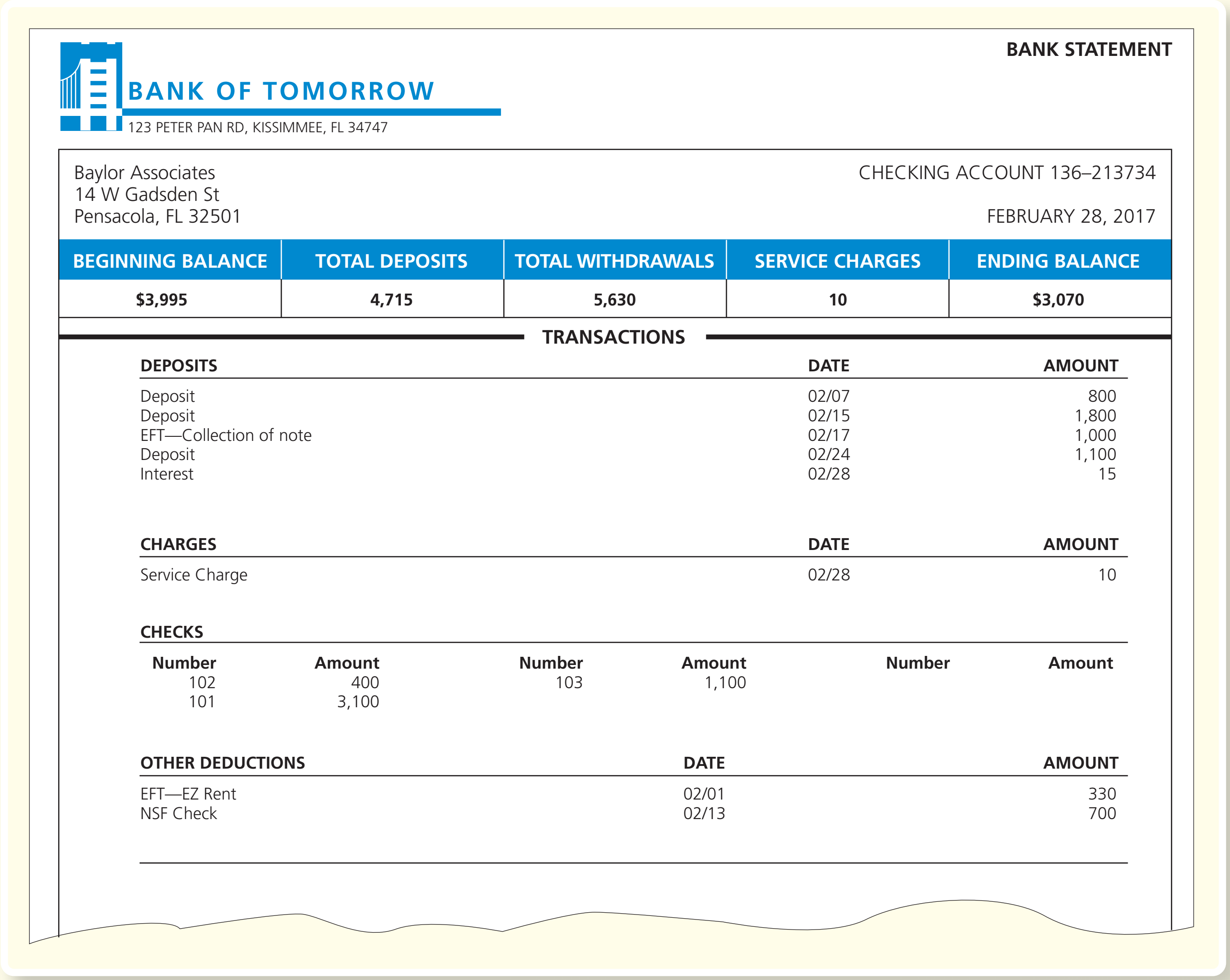
> Summary Problem 7-2

The Cash account of Baylor Associates at February 28, 2017, follows:

Cash

Beg. Bal.	3,995	400	Feb. 3
Feb. 6	800	3,100	Feb. 12
Feb. 15	1,800	1,100	Feb. 19
Feb. 23	1,100	500	Feb. 25
Feb. 28	2,400	900	Feb. 27
End. Bal.	4,095		

Baylor Associates received the following bank statement on February 28, 2017:



BANK STATEMENT

BANK OF TOMORROW

123 PETER PAN RD, KISSIMMEE, FL 34747

Baylor Associates
14 W Gadsden St
Pensacola, FL 32501

CHECKING ACCOUNT 136–213734

FEBRUARY 28, 2017

BEGINNING BALANCE	TOTAL DEPOSITS	TOTAL WITHDRAWALS	SERVICE CHARGES	ENDING BALANCE
$3,995	**4,715**	**5,630**	**10**	**$3,070**

TRANSACTIONS

DEPOSITS	DATE	AMOUNT
Deposit	02/07	800
Deposit	02/15	1,800
EFT—Collection of note	02/17	1,000
Deposit	02/24	1,100
Interest	02/28	15

CHARGES	DATE	AMOUNT
Service Charge	02/28	10

CHECKS

Number	Amount	Number	Amount	Number	Amount
102	400	103	1,100		
101	3,100				

OTHER DEDUCTIONS	DATE	AMOUNT
EFT—EZ Rent	02/01	330
NSF Check	02/13	700

Additional data:

Baylor deposits all cash receipts in the bank and makes all payments by check.

Requirements

1. Prepare the bank reconciliation of Baylor Associates at February 28, 2017.
2. Journalize the entries based on the bank reconciliation.

> Solution

Requirement 1

BAYLOR ASSOCIATES
Bank Reconciliation
February 28, 2017

Bank:		
Balance, February 28, 2017		$ 3,070
Add: Deposit of February 28 in transit		2,400
		5,470
Less: Outstanding checks issued on February 25 ($500)		
and February 27 ($900)		1,400
Adjusted bank balance, February 28, 2017		**$ 4,070**
Books:		
Balance, February 28, 2017		$ 4,095
Add: Bank collection of note receivable	$ 1,000	
Interest revenue earned on bank balance	15	1,015
		5,110
Less: Service charge	10	
NSF check	700	
EFT—Rent expense	330	1,040
Adjusted book balance, February 28, 2017		**$ 4,070**

Must be equal.

Requirement 2

Date	Accounts and Explanation	Debit	Credit
Feb. 28	Cash	1,000	
	Notes Receivable		1,000
	Note receivable collected by bank.		
28	Cash	15	
	Interest Revenue		15
	Interest earned on bank balance.		
28	Bank Expense	10	
	Cash		10
	Bank service charge.		
28	Accounts Receivable	700	
	Cash		700
	NSF check returned by bank.		
28	Rent Expense	330	
	Cash		330
	Monthly rent expense.		

> Key Terms

Account Number (p. 412)
Bank Reconciliation (p. 414)
Bank Statement (p. 413)
Canceled Checks (p. 413)
Cash Equivalent (p. 419)
Cash Ratio (p. 419)
Check (p. 412)
Collusion (p. 403)
Credit Memorandum (p. 415)
Debit Memorandum (p. 415)
Deposit in Transit (p. 414)
Deposit Ticket (p. 412)
Electronic Data Interchange (EDI) (p. 408)
Electronic Funds Transfer (EFT) (p. 413)
Encryption (p. 402)
Evaluated Receipts Settlement (ERS) (p. 408)
External Auditor (p. 401)
Firewall (p. 402)
Imprest System (p. 409)
Internal Auditor (p. 401)
Internal Control (p. 399)
Internal Control Report (p. 400)
Lock-Box System (p. 405)
Maker (p. 412)
Nonsufficient Funds (NSF) Check (p. 415)
Outstanding Check (p. 414)
Payee (p. 412)
Petty Cash (p. 408)
Public Company (p. 399)
Remittance Advice (p. 405)
Routing Number (p. 412)
Sarbanes-Oxley Act (SOX) (p. 399)
Separation of Duties (p. 402)
Signature Card (p. 412)
Timing Difference (p. 414)

> Quick Check

1. Which of the following is *not* part of the definition of internal control? **Learning Objective 1**
    - **a.** Separation of duties
    - **b.** Safeguard assets
    - **c.** Encourage employees to follow company policies
    - **d.** Promote operational efficiency

2. The Sarbanes-Oxley Act **Learning Objective 1**
    - **a.** created the Private Company Accounting Board.
    - **b.** allows accountants to audit and to perform any type of consulting work for a public company.
    - **c.** stipulates that violators of the act may serve 20 years in prison for securities fraud.
    - **d.** requires that an outside auditor must evaluate a public company's internal controls.

3. Encryption **Learning Objective 1**
    - **a.** avoids the need for separation of duties.
    - **b.** creates firewalls to protect data.
    - **c.** cannot be broken by hackers.
    - **d.** rearranges messages by a special process.

4. Separation of duties is important for internal control of **Learning Objective 1**
    - **a.** cash receipts.
    - **b.** cash payments.
    - **c.** Neither of the above
    - **d.** Both a and b

5. Michelle Darby receives cash from customers. Her other assigned job is to post the collections to customer accounts receivable. Her company has weak **Learning Objective 2**
    - **a.** assignment of responsibilities.
    - **b.** ethics.
    - **c.** computer controls.
    - **d.** separation of duties.

6. Payment by check is an important internal control over cash payments because **Learning Objective 3**
    - **a.** the check must be signed by an authorized official.
    - **b.** before signing the check, the official reviews the invoice supporting the payment.
    - **c.** Both a and b
    - **d.** None of the above

7. The petty cash fund had an initial imprest balance of $100. It currently has $20 and petty cash tickets totaling $75 for office supplies. The entry to replenish the fund would contain **Learning Objective 4**
    - **a.** a credit to Cash Short & Over for $5.
    - **b.** a credit to Petty Cash for $80.
    - **c.** a debit to Cash Short & Over for $5.
    - **d.** a debit to Petty Cash for $80.

8. The document that explains all the differences between the company's cash records and the bank's figures is called a(n) **Learning Objective 5**
    - **a.** bank collection.
    - **b.** electronic fund transfer.
    - **c.** bank statement.
    - **d.** bank reconciliation.

Learning Objective 5

9. Sahara Company's Cash account shows an ending balance of $650. The bank statement shows a $29 service charge and an NSF check for $150. A $240 deposit is in transit, and outstanding checks total $420. What is Sahara's adjusted cash balance?

a. $291
b. $829
c. $471
d. $470

Learning Objective 6

10. Espinoza Air Conditioning & Heating had the following select financial data as of June 30, 2016.

Cash	$ 10,000
Cash Equivalents	8,850
Accounts Receivable	3,700
Total current liabilities	29,000

What is Espinoza's cash ratio?

a. 0.34 **b.** 0.65 **c.** 0.78 **d.** 1.54

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is internal control?
2. How does the Sarbanes-Oxley Act relate to internal controls?
3. What are the five components of internal control? Briefly explain each component.
4. What is the difference between an internal auditor and external auditor?
5. What is separation of duties?
6. List internal control procedures related to e-commerce.
7. What are some limitations of internal controls?
8. How do businesses control cash receipts over the counter?
9. How do businesses control cash receipts by mail?
10. What are the steps taken to ensure control over purchases and payments by check?
11. What are the controls needed to secure the petty cash fund?
12. When are the only times the Petty Cash account is used in a journal entry?
13. What are some common controls used with a bank account?
14. What is a bank reconciliation?
15. List some examples of timing differences, and for each difference, determine if it would affect the book side of the reconciliation or the bank side of the reconciliation.
16. Why is it necessary to record journal entries after the bank reconciliation has been prepared? Which side of the bank reconciliation requires journal entries?
17. What does the cash ratio help determine, and how is it calculated?

> Short Exercises

S7-1 Defining internal control

Learning Objective 1

Internal controls are designed to safeguard assets, encourage employees to follow company policies, promote operational efficiency, and ensure accurate accounting records.

Requirements

1. Which objective do you think is most important?
2. Which objective do you think the internal controls must accomplish for the business to survive? Give your reason.

S7-2 Applying internal control over cash receipts

Learning Objective 2

Sandra Kristof sells furniture for McKinney Furniture Company. Kristof is having financial problems and takes $650 that she received from a customer. She rang up the sale through the cash register. What will alert Megan McKinney, the controller, that something is wrong?

S7-3 Applying internal control over cash receipts by mail

Learning Objective 2

Review the internal controls over cash receipts by mail presented in the chapter. Exactly what is accomplished by the final step in the process, performed by the controller?

S7-4 Applying internal control over cash payments by check

Learning Objective 3

A purchasing agent for Franklin Office Supplies receives the goods that he purchases and also approves payment for the goods.

Requirements

1. How could this purchasing agent cheat his company?
2. How could Franklin avoid this internal control weakness?

S7-5 Journalizing petty cash

Learning Objective 4

Prepare the journal entries for the following petty cash transactions of Pawnee Gaming Supplies:

Sep. 1	Established a petty cash fund with a $150 balance.
30	The petty cash fund has $14 in cash and $148 in petty cash tickets that were issued to pay for Office Supplies ($58) and Entertainment Expense ($90). Replenished the fund and recorded the expenses.
Oct. 15	Increased the balance of the petty cash fund to $350.

S7-6 Understanding bank account controls

Learning Objective 5

Answer the following questions about the controls in bank accounts:

Requirements

1. Which bank control protects against forgery?
2. Which bank control reports the activity in the customer's account each period?
3. Which bank control confirms the amount of money put into the bank account?

Learning Objective 5

S7-7 Identifying timing differences related to a bank reconciliation

For each timing difference listed, identify whether the difference would be reported on the book side of the reconciliation or the bank side of the reconciliation. In addition, identify whether the difference would be an addition or subtraction.

a. Deposit in transit

b. Bank collection

c. Debit memorandum

d. EFT cash receipt

e. Outstanding checks

f. $1,000 deposit erroneously recorded by the bank as $100

g. Service charges

h. Interest revenue

i. $2,500 cash payment for rent expense erroneously recorded by the business as $250

j. Credit memorandum

Learning Objective 5

S7-8 Preparing a bank reconciliation

The Cash account of Safety Security Systems reported a balance of $2,450 at December 31, 2016. There were outstanding checks totaling $1,700 and a December 31 deposit in transit of $300. The bank statement, which came from Park Cities Bank, listed the December 31 balance of $4,460. Included in the bank balance was a collection of $620 on account from Brendan Ballou, a Safety customer who pays the bank directly. The bank statement also shows a $20 service charge and $10 of interest revenue that Safety earned on its bank balance. Prepare Safety's bank reconciliation at December 31.

Note: Short Exercise S7-8 must be completed before attempting Short Exercise S7-9.

Learning Objective 5

S7-9 Recording transactions from a bank reconciliation

Review your results from preparing Safety Security Systems's bank reconciliation in Short Exercise S7-8. Journalize the company's transactions that arise from the bank reconciliation. Include an explanation with each entry.

Learning Objective 6

S7-10 Computing the cash ratio

Beautiful Banners reported the following figures in its financial statements:

Cash	$ 30,800
Cash Equivalents	2,000
Total Current Liabilities	26,240

Compute the cash ratio for Beautiful Banners.

> Exercises

Learning Objective 1

E7-11 Understanding Sarbanes-Oxley and identifying internal control strengths and weaknesses

The following situations suggest a strength or a weakness in internal control.

a. Top managers delegate all internal control procedures to the accounting department.

b. Accounting department staff (or the bookkeeper) orders merchandise and approves invoices for payment.

c. Cash received over the counter is controlled by the sales clerk, who rings up the sale and places the cash in the register. The sales clerk matches the total recorded by the register to each day's cash sales.

d. The employee who signs checks need not examine the payment packet because he is confident the amounts are correct.

Requirements

1. Define *internal control.*
2. The system of internal control must be tested by external auditors. What law or rule requires this testing?
3. Identify each item in the list above as either a strength or a weakness in internal control, and give your reason for each answer.

E7-12 Identifying internal controls

Learning Objective 1

Consider each situation separately. Identify the missing internal control procedure from these characteristics:

- Assignment of responsibilities
- Separation of duties
- Audits
- Electronic devices
- Other controls (specify)

a. While reviewing the records of Quality Pharmacy, you find that the same employee orders merchandise and approves invoices for payment.

b. Business is slow at Amazing Amusement Park on Tuesday, Wednesday, and Thursday nights. To reduce expenses, the business decides not to use a ticket taker on those nights. The ticket seller (cashier) is told to keep the tickets as a record of the number sold.

c. The same trusted employee has served as cashier for 12 years.

d. When business is brisk, Fast Mart deposits cash in the bank several times during the day. The manager at one store wants to reduce the time employees spend delivering cash to the bank, so he starts a new policy. Cash will build up over weekends, and the total will be deposited on Monday.

e. Grocery stores such as Convenience Market and Natural Foods purchase most merchandise from a few suppliers. At another grocery store, the manager decides to reduce paperwork. He eliminates the requirement that the receiving department prepare a receiving report listing the goods actually received from the supplier.

E7-13 Evaluating internal control over cash receipts

Learning Objective 2

Dogtopia sells pet supplies and food and handles all sales with a cash register. The cash register displays the amount of the sale. It also shows the cash received and any change returned to the customer. The register also produces a customer receipt but keeps no internal record of the transactions. At the end of the day, the clerk counts the cash in the register and gives it to the cashier for deposit in the company bank account.

Requirements

1. Identify the internal control weakness over cash receipts.
2. What could you do to correct the weakness?

Learning Objective 3

E7-14 Evaluating internal control over cash payments

Gary's Great Cars purchases high-performance auto parts from a Nebraska vendor. Dave Simon, the accountant for Gary's, verifies receipt of merchandise and then prepares, signs, and mails the check to the vendor.

Requirements

1. Identify the internal control weakness over cash payments.
2. What could the business do to correct the weakness?

Learning Objectives 1, 2, 3

E7-15 Understanding internal control, components, procedures, and laws

Match the following terms with their definitions.

1. Internal control
2. Control procedures
3. Firewalls
4. Encryption
5. Environment
6. Information system
7. Separation of duties
8. Collusion
9. Documents
10. Audits
11. Operational efficiency
12. Risk assessment
13. Sarbanes-Oxley Act

a. Two or more people working together to overcome internal controls.
b. Part of internal control that ensures resources are not wasted.
c. Requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports.
d. Should be prenumbered to prevent theft and inefficiency.
e. Limits access to a local network.
f. Example: The person who opens the bank statement should not also be the person who is reconciling cash.
g. Identification of uncertainties that may arise due to a company's products, services, or operations.
h. Examination of a company's financial statements and accounting system by a trained accounting professional.
i. Without a sufficient one of these, information cannot properly be gathered and summarized.
j. The organizational plan and all the related measures that safeguard assets, encourage employees to follow company policies, promote operational efficiency, and ensure accurate and reliable accounting data.
k. Component of internal control that helps ensure business goals are achieved.
l. Rearranges data by a mathematical process.
m. To establish an effective one, a company's CEO and top managers must behave honorably to set a good example for employees.

E7-16 Accounting for petty cash

Learning Objective 4

2. Cash Short & Over $12

Christine's Dance Studio created a $370 imprest petty cash fund. During the month, the fund custodian authorized and signed petty cash tickets as follows:

Petty Cash Ticket No.	Item	Account Debited	Amount
1	Delivery of programs to customers	Delivery Expense	$ 20
2	Mail package	Postage Expense	40
3	Newsletter	Printing Expense	30
4	Key to closet	Miscellaneous Expense	50
5	Copier paper	Office Supplies	60

Requirements

1. Make the general journal entry to create the petty cash fund. Include an explanation.
2. Make the general journal entry to record the petty cash fund replenishment. Cash in the fund totals $155. Include an explanation.
3. Assume that Christine's Dance Studio decides to decrease the petty cash fund to $240. Make the general journal entry to record this decrease.

E7-17 Controlling petty cash

Learning Objective 4

2. March 31, Cash CR $226

Hangin' Out Night Club maintains an imprest petty cash fund of $150, which is under the control of Sandra Morgan. At March 31, the fund holds $14 cash and petty cash tickets for office supplies, $120, and delivery expense, $30.

Requirements

1. Explain how an imprest petty cash system works.
2. Journalize the establishment of the petty cash fund on March 1 and the replenishment of the fund on March 31.
3. Prepare a T-account for Petty Cash, and post to the account. What is the balance of the Petty Cash account at all times?

E7-18 Classifying bank reconciliation items

Learning Objective 5

The following items could appear on a bank reconciliation:

a. Outstanding checks, $670.

b. Deposits in transit, $1,500.

c. NSF check from customer, #548, for $175.

d. Bank collection of note receivable of $800, and interest of $80.

e. Interest earned on bank balance, $20.

f. Service charge, $10.

g. The business credited Cash for $200. The correct amount was $2,000.

h. The bank incorrectly decreased the business's account by $350 for a check written by another business.

Classify each item as (1) an addition to the book balance, (2) a subtraction from the book balance, (3) an addition to the bank balance, or (4) a subtraction from the bank balance.

Learning Objective 5

1. Adjusted Balance $1,270

E7-19 Preparing a bank reconciliation

Washington Photography's checkbook lists the following:

Date	Check No.	Item	Check	Deposit	Balance
Nov. 1					$ 540
4	622	Quick Mailing	$ 50		490
9		Service Revenue		$ 115	605
13	623	Photo Supplies	70		535
14	624	Utilities	90		445
18	625	Cash	75		370
26	626	Office Supplies	70		300
28	627	Upstate Realty Co.	290		10
30		Service Revenue		1,220	1,230

Washington's November bank statement shows the following:

Balance			$ 540
Deposits			115
Checks:	No.	Amount	
	622	$ 50	
	623	70	
	624	140*	
	625	75	(335)
Other charges:			
Printed checks		$ 27	
Service charge		15	(42)
Balance			$ 278

*This is the correct amount for check number 624.

Requirements

1. Prepare Washington Photography's bank reconciliation at November 30, 2016.
2. How much cash does Washington actually have on November 30, 2016?
3. Journalize any transactions required from the bank reconciliation.

Learning Objective 5

1. Book Deductions $348

E7-20 Preparing a bank reconciliation

Brett Warren Corporation operates four bowling alleys. The business just received the October 31, 2016, bank statement from City National Bank, and the statement shows an ending balance of $900. Listed on the statement are an EFT rent collection of $405, a service charge of $7, NSF checks totaling $45, and a $26 charge for printed checks. In reviewing the cash records, the business identified outstanding checks totaling $460 and a deposit in transit of $1,765. During October, the business recorded a $260 check by debiting Salaries Expense and crediting Cash for $26. The business's Cash account shows an October 31 balance of $2,112.

Requirements

1. Prepare the bank reconciliation at October 31.
2. Journalize any transactions required from the bank reconciliation.

> Problems Group A

P7-21A Identifying internal control weakness in cash receipts

Learning Objective 2

K Street Productions makes all sales on credit. Cash receipts arrive by mail. Larry Broaddus, the mailroom clerk, opens envelopes and separates the checks from the accompanying remittance advices. Broaddus forwards the checks to another employee, who makes the daily bank deposit but has no access to the accounting records. Broaddus sends the remittance advices, which show cash received, to the accounting department for entry in the accounts. Broaddus's only other duty is to grant sales allowances to customers. (A *sales allowance* decreases the customer's account receivable.) When Broaddus receives a customer check for $375 less a $40 sales allowance, he records the sales allowance and forwards the document to the accounting department.

Requirements

1. Identify the internal control weakness in this situation.
2. Who should record sales allowances?
3. What is the amount that should be shown in the ledger for cash receipts?

P7-22A Correcting internal control weakness

Learning Objectives 1, 2, 3

Each of the following situations has an internal control weakness.

a. Upside-Down Applications develops custom programs to customer's specifications. Recently, development of a new program stopped while the programmers redesigned Upside-Down's accounting system. Upside-Down's accountants could have performed this task.

b. Norma Rottler has been your trusted employee for 24 years. She performs all cash-handling and accounting duties. Ms. Rottler just purchased a new luxury car and a new home in an expensive suburb. As owner of the company, you wonder how she can afford these luxuries because you pay her only $30,000 a year and she has no source of outside income.

c. Izzie Hardwoods, a private company, falsified sales and inventory figures in order to get an important loan. The loan went through, but Izzie later went bankrupt and could not repay the bank.

d. The office supply company where Pet Grooming Goods purchases sales receipts recently notified Pet Grooming Goods that its documents were not prenumbered. Howard Mustro, the owner, replied that he never uses receipt numbers.

e. Discount stores such as Cusco make most of their sales in cash, with the remainder in credit card sales. To reduce expenses, one store manager ceases purchasing fidelity bonds on the cashiers.

f. Cornelius's Corndogs keeps all cash receipts in an empty box for a week because the owner likes to go to the bank on Tuesdays when Joann is working.

Requirements

1. Identify the missing internal control characteristics in each situation.
2. Identify the possible problem caused by each control weakness.
3. Propose a solution to each internal control problem.

Learning Objective 4

3. June 30, Cash CR $230

P7-23A Accounting for petty cash transactions

On June 1, Top Taste Salad Dressings creates a petty cash fund with an impress balance of $400. During June, Sunny Lewis, the fund custodian, signs the following petty cash tickets:

Petty Cash Ticket Number	Item	Amount
101	Office supplies	$ 10
102	Cab fare for executive	20
103	Delivery of package across town	25
104	Business dinner	45
105	Merchandise inventory	105

On June 30, prior to replenishment, the fund contains these tickets plus cash of $205. The accounts affected by petty cash payments are Office Supplies, Travel Expense, Delivery Expense, Entertainment Expense, and Merchandise Inventory.

Requirements

1. Explain the characteristics and the internal control features of an imprest fund.
2. On June 30, how much cash should the petty cash fund hold before it is replenished?
3. Journalize all required entries to create the fund and replenish it. Include explanations.
4. Make the July 1 entry to increase the fund balance to $475. Include an explanation, and briefly describe what the custodian does.

Learning Objective 4

2. June 30, Cash CR $158

P7-24A Accounting for petty cash transactions

Suppose that on June 1, Bash Gyrations, a disc jockey service, creates a petty cash fund with an imprest balance of $300. During June, AI Franklin, fund custodian, signs the following petty cash tickets:

Petty Cash Ticket Number	Item	Amount
1	Postage for package received	$ 20
2	Office party	10
3	Two boxes of stationery	35
4	Printer cartridges	25
5	Business dinner	60

On June 30, prior to replenishment, the fund contains these tickets plus cash of $143. The accounts affected by petty cash payments are Office Supplies, Entertainment Expense, and Postage Expense.

Requirements

1. On June 30, how much cash should this petty cash fund hold before it is replenished?
2. Journalize all required entries to (a) create the fund and (b) replenish it. Include explanations.
3. Make the entry on May 1 to increase the fund balance to $350. Include an explanation.

Learning Objective 5

1. Adjusted Balance $17,010

P7-25A Preparing a bank reconciliation and journal entries

The December cash records of Donald Insurance follow:

Cash Receipts		Cash Payments	
Date	**Cash Debit**	**Check No.**	**Cash Credit**
Dec. 4	$ 4,150	1416	$ 850
9	540	1417	190
14	580	1418	710
17	2,000	1419	1,290
31	1,850	1420	1,430
		1421	1,300
		1422	680

Donald's Cash account shows a balance of $16,270 at December 31. On December 31, Donald Insurance received the following bank statement:

Bank Statement for December

Beginning Balance				$ 13,600
Deposits and other Credits:				
Dec.	1	EFT	$ 350	
Dec.	5		4,150	
Dec.	10		540	
Dec.	15		580	
Dec.	18		2,000	
Dec.	22	BC	1,700	9,320
Checks and other Debits:				
Dec.	8	NSF	900	
Dec.	11 (check no. 1416)		850	
Dec.	19	EFT	560	
Dec.	22 (check no. 1417)		190	
Dec.	29 (check no. 1418)		710	
Dec.	31 (check no. 1419)		1,920	
Dec.	31	SC	10	(5,140)
Ending Balance				**$ 17,780**

Explanations: BC–bank collection; EFT–electronic funds transfer; NSF–nonsufficient funds checks; SC–service charge

Additional data for the bank reconciliation follow:

a. The EFT credit was a receipt of rent. The EFT debit was an insurance payment.

b. The NSF check was received from a customer.

c. The $1,700 bank collection was for a note receivable.

d. The correct amount of check number 1419, for rent expense, is $1,920. Donald's controller mistakenly recorded the check for $1,290.

Requirements

1. Prepare the bank reconciliation of Donald Insurance at December 31, 2016.
2. Journalize any required entries from the bank reconciliation.

Learning Objective 5

1. Book Additions $2,610

P7-26A Preparing a bank reconciliation and journal entries

The August 31 bank statement of Watson Healthcare has just arrived from United Bank. To prepare the bank reconciliation, you gather the following data:

a. The August 31 bank balance is $5,630.

b. The bank statement includes two charges for NSF checks from customers. One is for $390 (#1), and the other is for $140 (#2).

c. The following Watson checks are outstanding at August 31:

Check No.	Amount
237	$ 90
288	160
291	550
294	620
295	10
296	100

d. Watson collects from a few customers by EFT. The August bank statement lists a $1,700 EFT deposit for a collection on account.

e. The bank statement includes two special deposits that Watson hasn't recorded yet: $850 for dividend revenue, and $60 for the interest revenue Watson earned on its bank balance during August.

f. The bank statement lists a $70 subtraction for the bank service charge.

g. On August 31, the Watson treasurer deposited $310, but this deposit does not appear on the bank statement.

h. The bank statement includes a $700 deduction for a check drawn by Multi-State Freight Company. Watson notified the bank of this bank error.

i. Watson's Cash account shows a balance of $3,100 on August 31.

Requirements

1. Prepare the bank reconciliation for Watson's Healthcare at August 31, 2016.
2. Journalize any required entries from the bank reconciliation. Include an explanation for each entry.

> Problems Group B

Learning Objective 2

P7-27B Identifying internal control weakness in cash receipts

Red Towne Productions makes all sales on credit. Cash receipts arrive by mail. Craig Padgitt, the mailroom clerk, opens envelopes and separates the checks from the accompanying remittance advices. Padgitt forwards the checks to another employee, who makes the daily bank deposit but has no access to the accounting records. Padgitt sends the remittance advices, which show cash received, to the accounting department for entry in the accounts. Padgitt's only other duty is to grant sales allowances to customers. (A *sales allowance* decreases the customer's account receivable.) When Padgitt receives a customer check for $575 less a $60 sales allowance, he records the sales allowance and forwards the document to the accounting department.

Requirements

1. Identify the internal control weakness in this situation.
2. WWho should record sales allowances?
3. What is the amount that should be shown in the ledger for cash receipts?

Learning Objectives 1, 2, 3

P7-28B Correcting internal control weakness

Each of the following situations has an internal control weakness.

a. Jade Applications has decided that one way to cut costs in the upcoming year is to fire the external auditor. The business believes that the internal auditor should be able to efficiently monitor the company's internal controls.

b. In an effort to minimize the amount of paperwork, Ross Homes has decided that it will not keep copies of customer invoices related to sales revenue. Ross believes that this effort will minimize the amount of data storage the company will have to pay for.

c. Elle Bee, a trusted employee for many years, has never taken a vacation. The owner believes that he's lucky that she is so committed to her job.

d. The Medicine Chest Company keeps a small petty cash fund to handle small cash transactions. Because no one wants to volunteer to be the custodian, the business manager has decided that all employees should have access to the petty cash. She figures that as long as each employee fills out a petty cash ticket, then there are proper controls in place.

e. Due to the cost of maintaining the security cameras, Wings and More has decided that it will remove the cameras that monitor the cash register.

f. Bryan Miller, manager of Hardware Emporium, prides himself on hiring exceptionally skilled employees who need no training to do their jobs.

Requirements

1. Identify the missing internal control characteristics in each situation.
2. Identify the possible problem caused by each control weakness.
3. Propose a solution to each internal control problem.

Learning Objective 4

3. Cash Short & Over CR $10

P7-29B Accounting for petty cash transactions

On June 1, Party Salad Dressings creates a petty cash fund with an imprest balance of $400. During June, Ruth Mangan, the fund custodian, signs the following petty cash tickets:

Petty Cash Ticket Number	Item	Amount
101	Office supplies	$ 5
102	Cab fare for executive	35
103	Delivery of package across town	20
104	Business dinner	65
105	Merchandise inventory	130

On June 30, prior to replenishment, the fund contains these tickets plus cash of $170. The accounts affected by petty cash payments are Office Supplies, Travel Expense, Delivery Expense, Entertainment Expense, and Merchandise Inventory.

Requirements

1. Explain the characteristics and the internal control features of an imprest fund.
2. On June 30, how much cash should the petty cash fund hold before it is replenished?
3. Journalize all required entries to create the fund and replenish it. Include explanations.
4. Make the July 1 entry to increase the fund balance to $475. Include an explanation, and briefly describe what the custodian does.

Learning Objective 4

2. Sep. 30, Cash CR $173

P7-30B Accounting for petty cash transactions

Suppose that on June 1, Fab Gyrations, a disc jockey service, creates a petty cash fund with an imprest balance of $250. During June, Ruth Mangan, fund custodian, signs the following petty cash tickets:

Petty Cash Ticket Number	Item	Amount
1	Postage for package received	$ 30
2	Office party	25
3	Two boxes of stationery	20
4	Printer cartridges	15
5	Business dinner	60

On June 30, prior to replenishment, the fund contains these tickets plus cash of $93. The accounts affected by petty cash payments are Office Supplies, Entertainment Expense, and Postage Expense.

Requirements

1. On June 30, how much cash should this petty cash fund hold before it is replenished?
2. Journalize all required entries to (a) create the fund and (b) replenish it. Include explanations.
3. Make the entry on May 1 to increase the fund balance to $275. Include an explanation.

P7-31B Preparing a bank reconciliation and journal entries

Learning Objective 5

1. Adjusted Balance $16,350

The December cash records of Davidson Insurance follow:

Cash Receipts		Cash Payments	
Date	**Cash Debit**	**Check No.**	**Cash Credit**
Dec. 4	$ 4,260	1416	$ 870
9	490	1417	180
14	590	1418	700
17	2,050	1419	1,490
31	1,860	1420	1,510
		1421	1,300
		1422	640

Davidson's Cash account shows a balance of $16,760 at December 31. On December 31, Davidson Insurance received the following bank statement:

Bank Statement for December

Beginning Balance				$ 14,200
Deposits and other Credits:				
Dec.	1	EFT	$ 250	
Dec.	5		4,260	
Dec.	10		490	
Dec.	15		590	
Dec.	18		2,050	
Dec.	22	BC	1,800	9,440
Checks and other Debits:				
Dec.	8	NSF	500	
Dec.	11 (check no. 1416)		870	
Dec.	19	EFT	560	
Dec.	22 (check no. 1417)		180	
Dec.	29 (check no. 1418)		700	
Dec.	31 (check no. 1419)		1,940	
Dec.	31	SC	10	(4,760)
Ending Balance				**$ 18,880**

Explanations: BC–bank collection; EFT–electronic funds transfer;
NSF–nonsufficient funds checks; SC–service charge

Additional data for the bank reconciliation follow:

a. The EFT credit was a receipt of rent. The EFT debit was an insurance payment.

b. The NSF check was received from a customer.

c. The $1,800 bank collection was for a note receivable.

d. The correct amount of check number 1419, for rent expense, is $1,940. Davidson's controller mistakenly recorded the check for $1,490.

Requirements

1. Prepare the bank reconciliation of Davidson Insurance at December 31, 2016.
2. Journalize any required entries from the bank reconciliation.

Learning Objective 5

1. Book Deductions $490

P7-32B Preparing a bank reconciliation and journal entries

The October 31 bank statement of Wollaston's Healthcare has just arrived from State Bank. To prepare the bank reconciliation, you gather the following data:

a. The October 31 bank balance is $5,580.

b. The bank statement includes two charges for NSF checks from customers. One is for $370 (#1), and the other is for $110 (#2).

c. The following Wollaston's checks are outstanding at October 31:

Check No.	Amount
237	$ 90
288	150
291	550
294	630
295	70
296	120

d. Wollaston's collects from a few customers by EFT. The October bank statement lists a $1,500 EFT deposit for a collection on account.

e. The bank statement includes two special deposits that Wollaston's hasn't recorded yet: $850 for dividend revenue and $30 for the interest revenue Wollaston's earned on its bank balance during October.

f. The bank statement lists a $10 subtraction for the bank service charge.

g. On October 31, the Wollaston's treasurer deposited $320, but this deposit does not appear on the bank statement.

h. The bank statement includes a $500 deduction for a check drawn by Multi-State Freight Company. Wollaston's notified the bank of this bank error.

i. Wollaston's Cash account shows a balance of $2,900 on October 31.

Requirements

1. Prepare the bank reconciliation for Wollaston's Healthcare at October 31, 2016.
2. Journalize any required entries from the bank reconciliation. Include an explanation for each entry.

> Continuing Problem

P7-33 Preparing a bank reconciliation and journal entries

This problem continues the Daniels Consulting situation from Problem P6-38 of Chapter 6. Daniels's March Cash T-account from its general ledger is as follows:

Cash

Feb. 28 Bal.	45,085	4,400	Mar. 1 (ck. 207)
Mar. 6	2,475	730	Mar. 14 (ck. 208)
Mar. 13	2,900	1,450	Mar. 14 (ck. 209)
Mar. 20	4,800	190	Mar. 28 (ck. 210)
Mar. 27	3,680	500	Mar. 30 (ck. 211)
Mar. 31 Bal.	51,670		

Daniels's bank statement dated March 31, 2017, follows:

Bank Statement for March 2017

Beginning Balance, February 28, 2017		$ 45,505
Deposits and other Credits:		
Mar. 1	$ 675	
Mar. 8	2,475	
Mar. 14	2,900	
Mar. 20 EFT Hip Hop Hats (on account)	550	
Mar. 22	4,800	
Mar. 28 Interest revenue	25	11,425
Checks and other Debits:		
Mar. 2 EFT to Paper Products	34	
Mar. 2 ck#206	1,095	
Mar. 18 ck#207	4,400	
Mar. 19 ck#209	1,450	
Mar. 28 EFT to The Cable Co.	85	
Mar. 28 ck#208	730	
Bank Service Charge	13	(7,807)
Ending Balance, March 31, 2017		**$ 49,123**

Requirements

1. Prepare the March bank reconciliation.
2. Journalize any transactions required from the bank reconciliation. Compute the adjusted account balance for the Cash T-account, and denote the balance as *End. Bal.*

> Practice Set

This problem continues the Crystal Clear Cleaning problem from Problem P6-39 of Chapter 6.

P7-34 Preparing a bank reconciliation and journal entries

The bank statement dated February 28, 2018, for Crystal Clear follows:

Bank Statement for February 2018

Beginning Balance, January 31, 2018			$ 0
Deposits and other Credits:			
Feb.	2	$ 30,000	
Feb.	10	100	
Feb.	18	14,000	
Feb.	20	42,000	
Feb.	23 EFT Weiler's Restaurant	450	
Feb.	28 Interest revenue	10	86,560
Checks and other Debits:			
Feb.	2 EFT to Check Art	30	
Feb.	5 ck#235	2,000	
Feb.	9 ck#237	1,600	
Feb.	9 ck#236	2,400	
Feb.	26 ck#239	1,500	
Feb.	28 EFT to Texas Energy	140	
Feb.	28 ck#240	200	
Bank Service Charge		19	(7,889)
Ending Balance, February 28, 2018			**$ 78,671**

Additional data for the bank reconciliation follow:

a. The company had the following EFT transactions:
- EFT credit on February 23 was a receipt of cash for services on account
- EFT debit on February 2 was a payment for printing of business checks
- EFT debit on February 28 was a payment for utilities

b. At February 28, there was a $900 deposit in transit.

c. The book balance as of January 31, 2018, was $78,750.

d. Check #238, $350, and check #241, $200, were still outstanding at the end of the month.

Requirements

1. Prepare the bank reconciliation.
2. Journalize any required entries from the bank reconciliation.

CRITICAL THINKING

> Decision Cases

Decision Case 7-1

Conduct an Internet search for information on internal control and Sarbanes-Oxley. Write a report of your findings. In your report, discuss some of the advantages and disadvantages of Sarbanes-Oxley. Present it to your class (if required by your instructor).

Decision Case 7-2

This case is based on an actual situation. Centennial Construction Company, headquartered in Dallas, Texas, built a Rodeway Motel 35 miles north of Dallas. The construction foreman, whose name was Slim Chance, hired the 40 workers needed to complete the project. Slim had the construction workers fill out the necessary tax forms, and he sent their documents to the home office.

Work on the motel began on April 1 and ended September 1. Each week, Slim filled out a timecard of hours worked by each employee during the week. Slim faxed the timecards to the home office, which prepared the payroll checks on Friday morning. Slim drove to the home office on Friday, picked up the payroll checks, and returned to the construction site. At 5 p.m. on Friday, Slim distributed payroll checks to the workers.

Requirements

1. Describe in detail the main internal control weakness in this situation. Specify what negative result(s) could occur because of the internal control weakness.
2. Describe what you would do to correct the internal control weakness.

> Fraud Case 7-1

Levon Helm was a kind of one-man mortgage broker. He would drive around Tennessee looking for homes that had second mortgages, and if the criteria were favorable, he would offer to buy the second mortgage for "cash on the barrelhead." Helm bought low and sold high, making sizable profits. Being a small operation, he employed one person, Cindy Patterson, who did all his bookkeeping. Patterson was an old family friend, and he trusted her so implicitly that he never checked up on the ledgers or the bank reconciliations. At some point, Patterson started "borrowing" from the business and concealing her transactions by booking phony expenses. She intended to pay it back someday, but she got used to the extra cash and couldn't stop. By the time the scam was discovered, she had drained the company of funds that it owed to many of its creditors. The company went bankrupt, Patterson did some jail time, and Helm lost everything.

Requirements

1. What was the key control weakness in this case?
2. Many small businesses cannot afford to hire enough people for adequate separation of duties. What can they do to compensate for this?

> Financial Statement Case 7-1

Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to **Starbucks Corporation's** 2013 Fiscal Year Annual Report. Study the audit opinion (labeled Report of Independent Registered Public Accounting Firm) of Starbucks Corporation and the Starbucks Corporation financial statements. Answer the following questions about the company:

Requirements

1. What is the name of Starbucks's outside auditing firm (independent registered public accounting firm)? What office of this firm signed the audit report? How long after the Starbucks year-end did the auditors issue their opinion?
2. Who bears primary responsibility for maintaining effective internal control over financial reporting? How can you tell?
3. Does it appear that Starbucks's internal controls are adequate? How can you tell?
4. What standard of auditing did the outside auditors use in examining the Starbucks financial statements?
5. By how much did Starbucks's cash balance (including cash equivalents) change during year ended September 29, 2013? What were the beginning and ending cash balances?
6. Review the notes to the consolidated financial statements, specifically Note 1 dealing with Cash and Cash Equivalents. What type of instruments does Starbucks consider to be cash equivalents?
7. Determine Starbucks's cash ratio as of September 29, 2013, and September 30, 2012. How do Starbucks's cash ratios compare with **Green Mountain Coffee Roasters** as illustrated in the chapter? Explain.

> Communication Activity 7-1

In 100 words or fewer, explain why there may be a difference between the bank statement ending cash balance and the ending balance in the Cash account. Give at least two examples each of adjustments to the bank balance and to the book balance.

> Quick Check Answers

1. a **2.** d **3.** d **4.** d **5.** d **6.** c **7.** c **8.** d **9.** c **10.** b

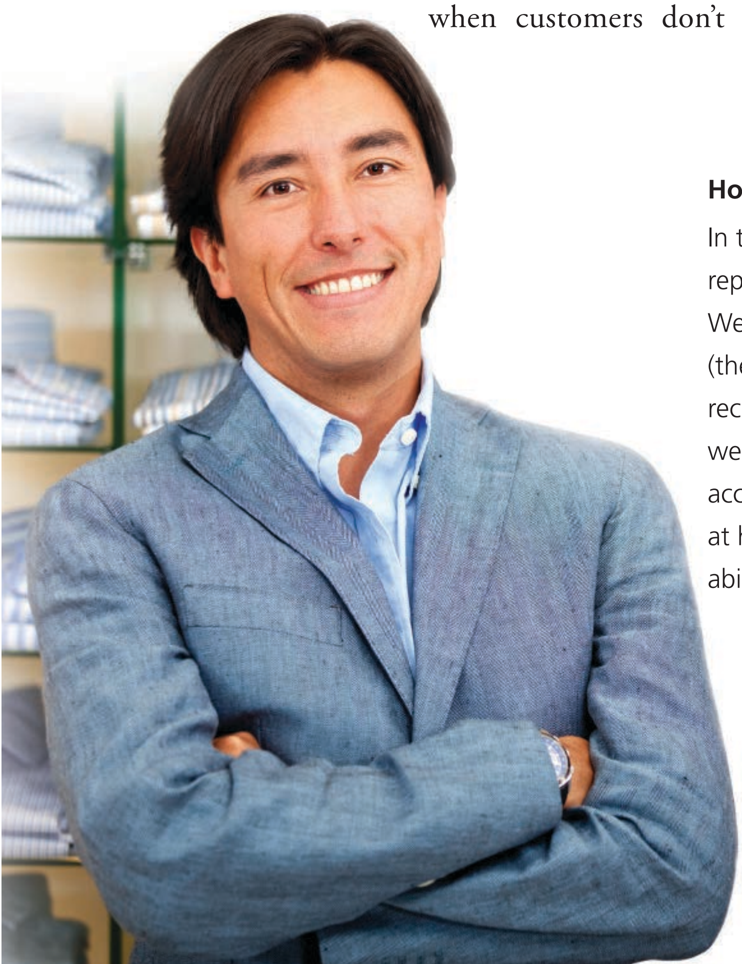
Receivables

8

Should Credit Be Extended?

James Hulsey works for a large department store as a credit manager. His main responsibility is managing all credit sales that generate accounts receivable. James must evaluate each customer's request for credit and determine which customers are allowed to purchase goods on credit. He does this by reviewing the customer's credit history and credit score. James has an important decision to make. He understands that granting credit increases the sales of the department store, but it also has its disadvantages.

One of those disadvantages is that the department store has to wait to receive cash. But, for James, the biggest disadvantage—and the most frustrating part of his job—is when customers don't pay. When this happens, the department store suffers a loss because it will never collect the cash associated with the sale. The department store must have a way to take the accounts of customers who will never make payment off the books; this is called a *write-off*. In addition, James must also help the department store estimate the amount of receivables that will be uncollectible. It's important that the department store have a good idea of the amount of cash that will actually be collected on its receivables so it can estimate future cash flows.



How Are Receivables Accounted For?

In this chapter, we determine how companies account for receivables. Receivables represent the right to receive cash in the future from a current transaction. We begin by looking at how companies such as Sears Holdings Corporation (the parent company of Kmart and Sears, Roebuck and Co.) record accounts receivable, including when customers don't make the required payments. Then we review notes receivable, which usually extend over a longer term than accounts receivable and typically involve interest. We finish the chapter by looking at how companies (and investors) can use financial ratios to evaluate a company's ability to collect cash on accounts receivable.

Chapter 8 Learning Objectives

1. Define and explain common types of receivables and journalize sales on credit, credit card sales, and debit card sales
2. Apply the direct write-off method for uncollectibles
3. Apply the allowance method for uncollectibles and estimate bad debts expense based on the percent-of-sales, percent-of-receivables, and aging-of-receivables methods
4. Account for notes receivable including computing interest and recording honored and dishonored notes
5. Use the acid-test ratio, accounts receivable turnover ratio, and days' sales in receivables to evaluate business performance

WHAT ARE COMMON TYPES OF RECEIVABLES, AND HOW ARE CREDIT SALES RECORDED?

Learning Objective 1
Define and explain common types of receivables and journalize sales on credit, credit card sales, and debit card sales

Receivable
A monetary claim against a business or an individual.

Debtor
The party to a credit transaction who takes on an obligation/payable.

A **receivable** occurs when a business sells goods or services to another party on account (on credit). It is a monetary claim against a business or an individual. The receivable is the seller's claim for the amount of the transaction. Receivables also occur when a business loans money to another party. A receivable is the right to *receive* cash in the future from a current transaction. It is something the business owns; therefore, it is an asset. *Each* receivable transaction involves two parties:

- The creditor, who receives a receivable (an asset). The creditor will collect cash from the customer or borrower.
- The **debtor**, the party to a credit transaction who takes on an obligation/payable (a liability). The debtor will pay cash later.

Types of Receivables

The three major types of receivables are:

- Accounts receivable
- Notes receivable
- Other receivables

Accounts Receivable

Accounts Receivable
The right to receive cash in the future from customers for goods sold or for services performed.

Accounts receivable, also called *trade receivables*, represent the right to receive cash in the future from customers for goods sold or for services performed. Accounts receivable are usually collected within a short period of time, such as 30 or 60 days, and are therefore reported as a current asset on the balance sheet.

Notes Receivable

Notes Receivable
A written promise that a customer will pay a fixed amount of principal plus interest by a certain date in the future.

Maturity Date
The date when a note is due.

Notes receivable usually have longer terms than accounts receivable. Notes receivable, sometimes called promissory notes, represent a written promise that a customer (or another individual or business) will pay a fixed amount of principal plus interest by a certain date in the future—called the **maturity date**. The maturity date is the date on which the notes receivable is due. A written document known as a promissory note serves as evidence of the debt and is signed by the debtor. Notes receivable due within one year or less are considered current assets. Notes receivable due beyond one year are long-term assets.

Other Receivables

Other receivables make up a miscellaneous category that includes any other type of receivable where there is a right to receive cash in the future. Common examples include dividends receivable, interest receivable, and taxes receivable. These other receivables may be either current or long-term assets, depending on whether they will be received within one year or less.

Exercising Internal Control Over Receivables

Businesses that sell goods or services on account receive cash (check payments) by mail or online payments (EFT), so internal control over collections is important. As we discussed in the previous chapter, a critical element of internal control is the separation of cash-handling and cash-accounting duties.

Most large companies also have a credit department to evaluate customers' credit applications to determine whether they meet the company's credit approval standards. The extension of credit is a balancing act. The company does not want to lose sales to good customers, but it also wants to avoid receivables that will never be collected. For good internal control over cash collections from receivables, separation of duties must be maintained. The credit department should have no access to cash, and those who handle cash should not be in a position to grant credit to customers. If a credit department employee also handles cash, he or she could pocket money received from a customer. The employee could then label the customer's account as uncollectible, and the company would stop billing that customer. In this scenario, the employee may have covered his or her theft.

Recording Sales on Credit

As discussed earlier, selling on account (on credit) creates an account receivable. Businesses must maintain a separate accounts receivable account for each customer in order to account for payments received from the customer and amounts still owed.

For example, Smart Touch Learning provides $5,000 in services to customer Brown on account and sells $10,000 (sales price) of merchandise inventory to customer Smith on account on August 8. The revenue is recorded (ignore Cost of Goods Sold) as follows:

Date	Accounts and Explanation	Debit	Credit
Aug. 8	Accounts Receivable—Brown	5,000	
	Service Revenue		5,000
	Performed service on account.		
8	Accounts Receivable—Smith	10,000	
	Sales Revenue		10,000
	Sold goods on account.		

A↑	=	**L**	+	**E**↑
Accounts Receivable↑				Service Revenue↑

A↑	=	**L**	+	**E**↑
Accounts Receivable↑				Sales Revenue↑

These separate customer accounts receivable (for example, Accounts Receivable—Brown) are called subsidiary accounts. The sum of all balances in subsidiary accounts receivable equals a control account balance. In this case, Accounts Receivable serves as the control account. This is illustrated as follows:

CONTROL ACCOUNT

Accounts Receivable

Bal.	15,000		

SUBSIDIARY ACCOUNTS

Accounts Receivable—Brown

Bal.	5,000		

Accounts Receivable—Smith

Bal.	10,000		

Total for subsidiary accounts = $15,000

The control account, Accounts Receivable, shows a balance of $15,000. The individual customer accounts in the subsidiary ledger (Accounts Receivable—Brown $5,000 + Accounts Receivable—Smith $10,000) add up to a total of $15,000.

When the business collects cash from both customers on August 29—$4,000 from Brown and $8,000 from Smith—Smart Touch Learning makes the following entry and posts the entry to the T-accounts:

A↑↓ = **L** + **E**

Cash↑
Accounts Receivable↓

Date	Accounts and Explanation	Debit	Credit
Aug. 29	Cash	12,000	
	Accounts Receivable—Brown		4,000
	Accounts Receivable—Smith		8,000
	Collected cash on account.		

CONTROL ACCOUNT

Accounts Receivable

Bal.	15,000	12,000	Aug. 29
Bal.	3,000		

SUBSIDIARY ACCOUNTS

Accounts Receivable—Brown

Bal.	5,000	4,000	Aug. 29
Bal.	1,000		

Accounts Receivable—Smith

Bal.	10,000	8,000	Aug. 29
Bal.	2,000		

Total for subsidiary accounts = $3,000

Recording Credit Card and Debit Card Sales

In addition to selling on account, most companies also accept credit cards and debit cards. By accepting credit cards and debit cards, such as Visa, MasterCard, and American Express, businesses are able to attract more customers. Credit cards offer the customer the convenience of buying something without having to pay cash immediately. Debit cards, on the other hand, reduce the customer's bank account immediately but allow the customer to pay electronically instead of with currency or by writing a check.

Businesses also benefit from accepting payment by credit and debit cards. They do not have to check each customer's credit rating or worry about keeping accounts receivable records or even collecting from the customer. The card issuer has the responsibility of collecting from the customer. Thus, instead of collecting cash from the customer, the seller will receive cash from the card issuer. There is, however, almost always a fee to the seller to cover the processing costs.

Companies hire a third-party processor to process credit and debit card transactions. Transactions are usually entered into an electronic terminal (card scanner) that the company either purchases or rents from the processor. The fees the card processor charges the company for its processing services vary depending on the type of card and the specific agreement the company has with the card processor. The processor agreement specifies how fees are paid to the processor. The following are two common methods of handling the proceeds and processing fees:

- **Net**—The total sale less the processing fee assessed equals the net amount of cash deposited by the processor, usually within a few days of the sale date.
- **Gross**—The total sale is deposited daily within a few days of the actual sale date. The processing fees for all transactions processed for the month are deducted from the company's bank account by the processor, often on the last day of the month.

Proceeds from credit and debit card transactions are usually deposited within a few business days after the sale. Therefore, credit and debit card sales are journalized similar to cash sales. For example, Smart Touch Learning sells merchandise inventory (ignore Cost of Goods Sold) to a customer for $3,000 on August 15. The customer pays with a third-party credit card. Smart Touch Learning would record the entry, assuming the card processor assesses a 4% fee and deposits the net amount, as follows:

Date	Accounts and Explanation	Debit	Credit
Aug. 15	Cash	2,880	
	Credit Card Expense ($3,000 × 0.04)	120	
	Sales Revenue		3,000
	Recorded credit card sales, net of fee.		

A↑		L	+	E↑
Cash↑	=			Sales Revenue↑ Credit Card Expense↑

The same entry, assuming the processor uses the gross method, on the sale date would be as follows:

Date	Accounts and Explanation	Debit	Credit
Aug. 15	Cash	3,000	
	Sales Revenue		3,000
	Recorded credit card sales.		

A↑		L	+	E↑
Cash↑	=			Sales Revenue↑

At the end of August, the processor would collect the fees assessed for the month. (*Note:* We assume only the one credit card sale for this month.)

Date	Accounts and Explanation	Debit	Credit
Aug. 31	Credit Card Expense	120	
	Cash		120
	Paid fees assessed by credit card processor.		

A↓		L	+	E↓
Cash↓	=			Credit Card Expense↑

Factoring and Pledging Receivables

One of the many drawbacks of accepting sales on account is that the company must wait for the receipt of cash. Sometimes this time period could be delayed as much as 60 to 90 days. In addition, there is always the risk that the company will never collect on the receivable. In the previous section, we looked at credit cards and debit cards as being an option to reduce this risk. Another option for a business is to either factor or pledge its receivables.

When a business factors its receivables, it sells its receivables to a finance company or bank (often called a *factor*). The business receives cash less an applicable fee from the factor for the receivables immediately. The factor, instead of the business, now collects the cash on the receivables. The business no longer has to deal with the collection of the receivable from the customer. The business receives cash associated with the receivable from the factor instead of the customer.

Pledging of receivables is another option for businesses that need cash immediately. In a pledging situation, a business uses its receivables as security for a loan. The business borrows money from a bank and offers its receivables as collateral. The business is still responsible for collecting on the receivables, but it uses this money to pay off the loan along with interest. In pledging, if the loan is not paid, the bank can collect on the receivables.

In both situations, the business has managed to receive cash immediately for the receivables instead of having to wait for collection.

DECISIONS

How could we get cash fast?

Peggy Goodman is the bookkeeper of a retail furniture store. Her store accepts credit from customers and lately has accumulated a large amount of accounts receivable instead of cash. Peggy knows that she will eventually receive the cash, but she is concerned about her cash flow. She needs to pay her employees and doesn't think she has enough cash on hand to do so. She is also concerned that she won't receive all of the cash that is due to the business. What should Peggy do?

Solution

Peggy should consider selling the receivables to a finance company or bank. If the business sells the receivables, it will receive cash immediately, less a fee charged by the finance company or bank. The buyer of the receivables (the finance company or bank) then takes over the receivables and is responsible for collecting the cash when the receivables come due. Peggy's store no longer has the risk of uncollectibles. However, this decision comes at a cost. Peggy must be willing to receive less cash because of the fee the buyer of the receivables charges.

Try It!

Phoenix Restaurants accepts credit and debit cards as forms of payment. Assume Phoenix had $12,000 of credit and debit card sales on June 30, 2015.

1. Suppose Phoenix's processor charges a 2% fee and deposits sales net of the fee. Journalize the sale transaction for the restaurant.
2. Suppose Phoenix's processor charges a 2% fee and deposits sales using the gross method. Journalize the sale transaction for the restaurant.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S8-1 and S8-2. MyAccountingLab

HOW ARE UNCOLLECTIBLES ACCOUNTED FOR WHEN USING THE DIRECT WRITE-OFF METHOD?

Learning Objective 2

Apply the direct write-off method for uncollectibles

Selling on account brings both a benefit and a cost:

- The benefit to a business is the potential increased revenues and profits by making sales to a wider range of customers.
- The cost, however, is that some customers do not pay, creating uncollectible receivables.

Customers' accounts receivable that are uncollectible must be written off or removed from the books because the company does not expect to receive cash in the future. Instead, the company must record an expense associated with the cost of the uncollectible account. This expense is called **bad debts expense**. Bad debts expense is sometimes called *doubtful accounts expense* or *uncollectible accounts expense*.

Bad Debts Expense

The cost to the seller of extending credit. It arises from the failure to collect from some credit customers.

There are two methods of accounting for uncollectible receivables and recording the related bad debts expense:

- Direct write-off method
- Allowance method

Recording and Writing Off Uncollectible Accounts—Direct Write-off Method

The **direct write-off method** of accounting for uncollectible receivables is primarily used by small, nonpublic companies. Under the direct write-off method, accounts receivable are written off and bad debts expense is recorded when the business determines that it will never collect from a specific customer.

Direct Write-off Method

A method of accounting for uncollectible receivables in which the company records bad debts expense when a customer's account receivable is uncollectible.

For example, let's assume that on August 9 Smart Touch Learning determines that it will not be able to collect $200 from customer Dan King for a sale of merchandise inventory made on May 5. The company would write off the customer's account receivable by debiting Bad Debts Expense and crediting the customer's Accounts Receivable as follows:

Date	Accounts and Explanation	Debit	Credit
Aug. 9	Bad Debts Expense	200	
	Accounts Receivable—King		200
	Wrote off an uncollectible account.		

A↓ = **L** + **E↓**

Accounts Receivable↓ = Bad Debts Expense↑

Once an account receivable is written off, the company stops pursuing the collection. Some companies might turn delinquent receivables over to an attorney or other collection agency to recover some of the cash for the company, but generally companies do not expect to receive any future payment.

Recovery of Accounts Previously Written Off—Direct Write-off Method

Occasionally after a company writes off an account, the customer will decide to make payment. To account for this recovery, the company must reverse the earlier write-off. For example, on September 10, Smart Touch Learning unexpectedly receives $200 cash from

Dan King. The company will reverse the earlier write-off and then record the cash collection as follows:

A↑	=	**L**	+	**E↑**
Accounts Receivable↑				Bad Debts Expense↓

A↑↓	=	**L**	+	**E**
Cash↑ Accounts Receivable↓				

Date	Accounts and Explanation	Debit	Credit
Sep. 10	Accounts Receivable—King	200	
	Bad Debts Expense		200
	Reinstated previously written off account.		
10	Cash	200	
	Accounts Receivable—King		200
	Collected cash on account.		

In order to keep accurate records about the collection of cash for a previously written off account, the business should reestablish the Accounts Receivable by debiting the receivable account. Then the business can record the receipt of cash for the receivable by debiting Cash and crediting Accounts Receivable. This helps restore the credit history of the customer by showing that the customer did fulfill the promise of payment.

Limitations of the Direct Write-off Method

The direct write-off method, as stated earlier, is often used only by small, nonpublic companies. This is because the direct write-off method violates the matching principle. The matching principle requires that the expense of uncollectible accounts be matched with the related revenue. For example, when using the direct write-off method, a company might record sales revenue in 2015 but not record the bad debts expense until 2016. By recording the bad debts expense in a different year than when the revenue was recorded, the company is overstating net income in 2015 and understating net income in 2016. In addition, on the balance sheet at December 31, 2015, Accounts Receivable will be overstated because the company will have some receivables that will be uncollectible but are not yet written off. This method is only acceptable for companies that have very few uncollectible receivables. Most companies must use a method that does a better job of matching expenses to the associated sales revenue. This method is called the *allowance method,* and it is the method required by GAAP.

Try It!

Williams Company uses the direct write-off method to account for uncollectible receivables. On July 18, Williams wrote off a $6,800 account receivable from customer W. Jennings. On August 24, Williams unexpectedly received full payment from Jennings on the previously written off account.

3. Journalize Williams's write-off on the uncollectible receivable.
4. Journalize Williams's collection of the previously written off receivable.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S8-3 and S8-4. MyAccountingLab

HOW ARE UNCOLLECTIBLES ACCOUNTED FOR WHEN USING THE ALLOWANCE METHOD?

Learning Objective 3

Apply the allowance method for uncollectibles and estimate bad debts expense based on the percent-of-sales, percent-of-receivables, and aging-of-receivables methods

Most companies use the allowance method to measure bad debts. The **allowance method** is based on the matching principle; thus, the key concept is to record bad debts expense in the same period as the sales revenue. The offset to the expense is a contra asset account called **Allowance for Bad Debts** or *Allowance for Doubtful Accounts*. The allowance account reduces the asset Accounts Receivable. The business does not wait to see which customers will not pay. Instead, it records a bad debts expense based on estimates developed from past experience and uses the Allowance for Bad Debts to hold the pool of "unknown" uncollectible accounts.

Allowance Method

A method of accounting for uncollectible receivables in which the company estimates bad debts expense instead of waiting to see which customers the company will not collect from.

Allowance for Bad Debts

A contra asset account, related to accounts receivable, that holds the estimated amount of uncollectible accounts.

Recording Bad Debts Expense—Allowance Method

When using the allowance method, companies estimate bad debts expense at the end of the period and then record an adjusting entry. Suppose that as of December 31, 2017, Smart Touch Learning estimates that $80 of its $4,400 accounts receivable are uncollectible. The accounting clerk will record the following adjusting entry:

Date	Accounts and Explanation	Debit	Credit
2017			
Dec. 31	Bad Debts Expense	80	
	Allowance for Bad Debts		80
	Recorded bad debts expense for the period.		

A↓		L	+	E↓
Allowance for Bad Debts↑	=			Bad Debts Expense↑

After posting the adjusting entry, Smart Touch Learning has the following balances in its accounts:

Accounts Receivable	
Dec. 31 4,400	

Allowance for Bad Debts	
	80 Dec. 31

Bad Debts Expense	
Dec. 31 80	

Accounts Receivable will be reported on the balance sheet, but it will now be shown at the net realizable value. **Net realizable value** is the net value the company expects to collect from its accounts receivable (Accounts Receivable less Allowance for Bad Debts). Smart Touch Learning would report the following on its balance sheet:

Net Realizable Value

The net value a company expects to collect from its accounts receivable. Accounts Receivable less Allowance for Bad Debts.

SMART TOUCH LEARNING Balance Sheet (Partial) December 31, 2017		
Assets		
Current Assets:		
Accounts Receivable	$ 4,400	
Less: Allowance for Bad Debts	(80)	$ 4,320

The balance sheet now reports the amount of accounts receivable that Smart Touch Learning expects to collect, $4,320. The contra account, Allowance for Bad Debts, is subtracted from Accounts Receivable showing that although $4,400 is owed to Smart Touch Learning, the company estimates that $80 of accounts receivable will be uncollectible.

IFRS

Under IFRS, receivables are recognized and reported similarly to what is required by GAAP. Accounts Receivable must be reported at net realizable value. The allowance method is used to accomplish the matching of bad debt expense to the sales of the period and to report receivables at net realizable value. Under IFRS, the Allowance for Bad Debts may be called the **Provision** for Bad Debts. IFRS provides more detailed criteria than GAAP for determining when an account is uncollectible.

ETHICS

Should the uncollectible accounts be underestimated?

Norah Wang is in the process of recording adjusting entries for her employer, Happy Kennels. She is evaluating the uncollectible accounts and determining the amount of bad debts expense to record for the year. Her manager, Gillian Tedesco, has asked that Norah underestimate the amount of uncollectible accounts for the year. Gillian is hoping to get a bank loan for an expansion of the kennel facility, and she is concerned that the net income of the company will be too low for a loan to be approved. What should Norah do?

Solution

It is important that accounts receivable be reported at the appropriate amount on the balance sheet. This involves determining an accurate estimate of uncollectible accounts and recognizing the associated bad debts expense. In understating the amount of uncollectible accounts, Norah would be misleading the bank on the amount of cash that Happy Kennels expects to collect in the future.

Why isn't Bad Debts Expense debited when writing off an account receivable when using the allowance method?

Writing Off Uncollectible Accounts—Allowance Method

When using the allowance method, companies still write off accounts receivable that are uncollectible. However, instead of recording a debit to Bad Debts Expense (as done when using the direct write-off method), the company will record a debit to Allowance for Bad Debts. **Bad Debts Expense is not debited when a company writes off an account receivable when using the allowance method because the company has already recorded the Bad Debts Expense as an adjusting entry.** The entry to write off an account under the allowance method has no effect on net income at the time of entry.

For example, on January 10, 2018, Smart Touch Learning determines that it cannot collect a total of $25 from its customer, Shawn Clark. The accounting clerk would record the following entry to write off the account:

A↑↓		L	+	E
Allowance for Bad Debts↓ Accounts Receivable↓	=			

Date	Accounts and Explanation	Debit	Credit
2018			
Jan. 10	Allowance for Bad Debts	25	
	Accounts Receivable—Clark		25
	Wrote off an uncollectible account.		

Smart Touch Learning's account balances after the write-off are:

Accounts Receivable

Jan. 1, 2018	4,400		
		25	Jan. 10, 2018
Bal.	4,375		

Allowance for Bad Debts

		80	Jan. 1, 2018
Jan. 10, 2018	25		
		55	Bal.

The entry to write off a receivable reduces the amount of the Allowance for Bad Debts account and also the Accounts Receivable account, but it does not affect the net realizable value shown on the balance sheet. This is because both Allowance for Bad Debts (contra asset) and Accounts Receivable (asset) were reduced by the amount of the write-off.

In addition, the write-off of a receivable does not affect net income because the entry does not involve revenue or expenses.

	Before Write-off	After Write-off
Accounts Receivable	$ 4,400	$ 4,375
Less: Allowance for Bad Debts	(80)	(55)
Net Realizable Value	$ 4,320	$ 4,320

Recovery of Accounts Previously Written Off—Allowance Method

After a company has previously written off an account, the company stops attempting to collect on the receivable. Customers will occasionally make payment on receivables that have already been written off. A business will need to reverse the write-off to the Allowance for Bad Debts account and then record the receipt of cash. In reversing the write-off, the business is reestablishing the receivable account and reversing the write-off from the Allowance for Bad Debts account.

Recall that Smart Touch Learning wrote off the $25 receivable from customer Shawn Clark on January 10, 2018. It is now March 4, 2018, and Smart Touch Learning unexpectedly receives $25 cash from Clark. The entries to reverse the write-off and record the receipt of cash are as follows:

Date	Accounts and Explanation	Debit	Credit
2018			
Mar. 4	Accounts Receivable—Clark	25	
	Allowance for Bad Debts		25
	Reinstated previously written off account.		
4	Cash	25	
	Accounts Receivable—Clark		25
	Collected cash on account.		

A↑↓		**L** + **E**
Accounts Receivable↑ Allowance for Bad Debts↑	=	

A↑↓		**L** + **E**
Cash↑ Accounts Receivable↓	=	

Estimating and Recording Bad Debts Expense—Allowance Method

How do companies determine the amount of bad debts expense when using the allowance method? Companies use their past experience as well as consider the economy, the industry they operate in, and other variables. In short, they make an educated guess, called an *estimate*. There are three basic ways to estimate uncollectibles:

- Percent-of-sales
- Percent-of-receivables
- Aging-of-receivables

Percent-of-Sales Method

The **percent-of-sales method** computes bad debts expense as a percentage of net credit sales. (Some companies will use all sales, not just credit sales.) This method is also called the *income-statement approach* because it focuses on the amount of expense that is reported on the income statement.

Percent-of-Sales Method
A method of estimating uncollectible receivables that calculates bad debts expense based on a percentage of net credit sales.

Let's return to Smart Touch Learning. Based on prior experience, the company's bad debts expense is normally 0.5% of net credit sales, which totaled $60,000 for the year. The accountant calculates bad debts expense using the percent-of-sales method as follows:

Percent-of-Sales Method:

Bad Debts Expense = Net credit sales × %
= $60,000 × 0.005
= $300

At December 31, Smart Touch Learning records the following adjusting entry to recognize bad debts expense for the year:

A↓		**L**	+	**E↓**
Allowance for Bad Debts↑	=			Bad Debts Expense↑

Date	Accounts and Explanation	Debit	Credit
2018			
Dec. 31	Bad Debts Expense	300	
	Allowance for Bad Debts		300
	Recorded bad debts expense for the period.		

When using the allowance method, the only time Bad Debts Expense is recorded is as an adjusting entry.

After posting the adjusting entry, Smart Touch Learning has the following balances in its balance sheet and income statement accounts. Ignore the previously recorded reversal of the write-off and assume collections on account during the year are $58,000:

Balance sheet accounts:

Accounts Receivable

Jan. 1, 2018, Bal.	4,400		
Net credit sales	60,000	25	Write-off
		58,000	Collections
Unadj. Bal.	6,375		
Dec. 31, 2018, Bal.	**6,375**		

Allowance for Bad Debts

		80	Jan. 1, 2018, Bal.
Write-off	25		
		55	Unadj. Bal.
		300	Adj.
		355	**Dec. 31, 2018, Bal.**

Income statement account:

Bad Debts Expense

Jan. 1, 2018, Bal.	0	
Adj.	300	
Dec. 31, 2018, Bal.	**300**	

Percent-of-Receivables Method

The percent-of-receivables and aging-of-receivables methods are based on the balance of accounts receivable. These approaches are also called *balance-sheet approaches* because they focus on Accounts Receivable (a balance sheet account) and determine a target allowance balance based on a percentage of the receivable balance.

The first balance sheet approach is the **percent-of-receivables method**. In the percent-of-receivables method, the business once again determines a percentage of uncollectible accounts based on past experience. This method is different than the percent-of-sales method because it multiplies the percentage by the *ending* unadjusted balance in the Accounts Receivable account instead of by net credit sales.

Percent-of-Receivables Method
A method of estimating uncollectible receivables by determining the balance of the Allowance for Bad Debts account based on a percentage of accounts receivable.

The calculation for bad debts expense under the percent-of-receivables method is a two-step process. First, the company determines the target balance of Allowance for Bad Debts. Then, it uses the target balance to determine the amount of the bad debts expense.

Percent-of-Receivables Method:

Step 1: Determine the target balance of Allowance for Bad Debts.

Target balance = Ending balance of accounts receivable × %

Step 2: Determine the amount of bad debts expense by evaluating the allowance account.

Bad debts expense = Target balance – Unadjusted credit balance of Allowance for Bad Debts

OR

Bad debts expense = Target balance + Unadjusted debit balance of Allowance for Bad Debts

Let's look at an example for Smart Touch Learning. Assume that at December 31, 2018, the company's unadjusted accounts receivable balance is $6,375. Smart Touch Learning estimates that 4% of its accounts receivable will be uncollectible. In step 1, the company determines the target balance for the Allowance for Bad Debts account: $255 ($6,375 × 0.04). Next, its accountant determines the amount of the bad debts expense adjustment: $255 − $55 = $200.

Allowance for Bad Debts

		80	Jan. 1, 2018, Bal.
Write-offs	25		
		55	Unadj. Bal.
		200	Adj.
		255	**Dec. 31, 2018, Bal.**

Step 2: The bad debts expense adjustment must be calculated based on the target balance. $255 – $55 = $200

Step 1: Calculate the target balance. It is always reported as a credit balance. $6,375 × 0.04 = $255

Smart Touch Learning records the following adjusting entry on December 31 to recognize bad debts expense for the year:

Date	Accounts and Explanation	Debit	Credit
2018			
Dec. 31	Bad Debts Expense	200	
	Allowance for Bad Debts		200
	Recorded bad debts expense for the period.		

A↓		L	+	E↓
Allowance for Bad Debts↑	=			Bad Debts Expense↑

After posting the adjusting entry, Smart Touch Learning has the following balances in its balance sheet and income statement accounts:

Balance sheet accounts:

Accounts Receivable

Jan. 1, 2018, Bal.	4,400		
Net credit sales	60,000	25	Write-offs
		58,000	Collections
Unadj. Bal.	6,375		
Dec. 31, 2018, Bal.	**6,375**		

Allowance for Bad Debts

		80	Jan. 1, 2018, Bal.
Write-offs	25		
		55	Unadj. Bal.
		200	Adj.
		255	**Dec. 31, 2018, Bal.**

Income statement account:

Bad Debts Expense

Jan. 1, 2018, Bal.	0		
Adj.	200		
Dec. 31, 2018, Bal.	**200**		

What if a business had a debit balance in the Allowance for Bad Debts account before the adjustment for bad debts expense?

In the preceding example, Smart Touch Learning had an unadjusted *credit* balance in the allowance account. **If a company has a debit balance before the adjustment, the calculation for bad debts expense is a little different. Instead of subtracting the unadjusted balance of the Allowance for Bad Debts from the target balance, the unadjusted balance will be added to the target balance.**

Let's look at an example. Suppose that Martin's Music has a *debit* balance in its Allowance for Bad Debts account of $150. Assume that it estimates its percentage of uncollectible accounts will be 2% of $40,000 of Accounts Receivable. Martin's Music's bad debts expense adjustment would be calculated as follows:

Allowance for Bad Debts

Unadj. Bal.	150		
		950	Adj.
		800	**Bal.**

Step 2: The bad debts expense adjustment must be calculated based on the target balance. $800 + $150 = $950

Step 1: Calculate the target balance. It is always reported as a credit balance. $40,000 × 0.02 = $800

A company will have a debit balance in the Allowance for Bad Debts account if the company has written off more accounts receivable than it expected to during the year.

Notice that when the allowance account has an unadjusted debit balance, the target balance must be added to the unadjusted balance of the Allowance for Bad Debts to determine the bad debts expense adjustment. Martin's Music would record the following adjusting entry to recognize bad debts expense:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Bad Debts Expense	950	
	Allowance for Bad Debts		950
	Recorded bad debts expense for the period.		

A↓		L	+	E↓
Allowance for Bad Debts↑	=			Bad Debts Expense↑

Aging-of-Receivables Method

The **aging-of-receivables method** is similar to the percent-of-receivables method. However, in the aging method, businesses group individual accounts (Broxson, Andrews, and so on) according to how long the receivable has been outstanding. Then they apply a different percentage uncollectible on each aging category. Exhibit 8-1 shows the aging schedule for Smart Touch Learning.

Aging-of-Receivables Method
A method of estimating uncollectible receivables by determining the balance of the Allowance for Bad Debts account based on the age of individual accounts receivable.

Exhibit 8-1 Aging of Accounts Receivable

Age of Account as of December 31, 2018

Customer Name	1–30 Days	31–60 Days	61–90 Days	Over 90 Days	Total Balance
Broxson	$ 800				$ 800
Phi Chi Fraternity	2,100				2,100
Andrews		$ 350			350
Jones		480			480
Perez	1,345				1,345
Thompson			$ 1,200		1,200
Clark				$ 100	100
Totals	$ 4,245	$ 830	$ 1,200	$ 100	$ 6,375
Estimated percentage uncollectible	× 1%	× 2%	× 3%	× 90%	
Estimated total uncollectible	$ 42	$ 17	$ 36	$ 90	$ 185

Target balance

At year-end, Smart Touch Learning will need to record the adjusting entry to recognize bad debts expense. The procedure is similar to the percent-of-receivables method.

Aging-of-Receivables Method:

Step 1: Determine the target balance of Allowance for Bad Debts by using the age of each account.

Step 2: Determine the amount of bad debts expense by evaluating the allowance account.

Bad debts expense = Target balance − Unadjusted credit balance of Allowance for Bad Debts

OR

Bad debts expense = Target balance + Unadjusted debit balance of Allowance for Bad Debts

Based on Exhibit 8-1, Smart Touch Learning knows the target balance of the Allowance for Bad Debts account is $185. Smart Touch Learning will determine its bad debts expense by subtracting the $55 unadjusted credit balance in the allowance account from the target balance, $185.

Allowance for Bad Debts

		80	Jan. 1, 2018, Bal.
Write-offs	25		
		55	Unadj. Bal.
		130	Adj.
		185	**Dec. 31, 2018, Bal.**

Step 2: The bad debts expense adjustment must be calculated based on the target balance. $185 − $55 = $130

Step 1: Calculate the target balance using the aging schedule. It is always reported as a credit balance.

Smart Touch Learning will record the following adjusting entry on December 31 to recognize bad debts expense for the year:

A↓		**L**	**+**	**E↓**
Allowance for Bad Debts↑	=			Bad Debts Expense↑

Date	Accounts and Explanation	Debit	Credit
2018			
Dec. 31	Bad Debts Expense	130	
	Allowance for Bad Debts		130
	Recorded bad debts expense for the period.		

After posting the adjusting entry, Smart Touch Learning has the following balances in its balance sheet and income statement accounts:

Balance sheet accounts:

Accounts Receivable

Jan. 1, 2018, Bal.	4,400		
Net credit sales	60,000	25	Write-offs
		58,000	Collections
Unadj. Bal.	6,375		
Dec. 31, 2018, Bal.	**6,375**		

Allowance for Bad Debts

		80	Jan. 1, 2018, Bal.
Write-offs	25		
		55	Unadj. Bal.
		130	Adj.
		185	**Dec. 31, 2018, Bal.**

Income statement account:

Bad Debts Expense

Jan. 1, 2018, Bal.	0		
Adj.	130		
Dec. 31, 2018, Bal.	**130**		

Comparison of Accounting for Uncollectibles

Exhibit 8-2 shows the journal entries that are recorded when using both the direct write-off method and the allowance method of accounting for uncollectibles. Take a moment to review the differences in these two methods. Remember that when using the direct write-off method, the business does not use an allowance account and that this method does not conform with GAAP.

Exhibit 8-2 | Direct Write-off Method Versus Allowance Method

DIRECT WRITE-OFF METHOD			ALLOWANCE METHOD		
Write-off of an uncollectible account:					
Bad Debts Expense	25		Allowance for Bad Debts	25	
Accounts Receivable—Customer Name		25	Accounts Receivable—Customer Name		25
Wrote off an uncollectible account.			*Wrote off an uncollectible account.*		
Recovery of accounts previously written off:					
Accounts Receivable—Customer Name	25		Accounts Receivable—Customer Name	25	
Bad Debts Expense		25	Allowance for Bad Debts		25
Reinstated previously written off account.			*Reinstated previously written off account.*		
Cash	25		Cash	25	
Accounts Receivable—Customer Name		25	Accounts Receivable—Customer Name		25
Collected cash on account.			*Collected cash on account.*		
Adjusting entry to recognize bad debts:					
No adjusting entry recorded.			Bad Debts Expense	300	
			Allowance for Bad Debts		300
			Recorded bad debts expense for the period.		

Under the allowance method of accounting for uncollectibles, businesses must estimate the amount of the bad debts expense at the end of the accounting period. This is done using one of three methods: percent-of-sales, percent-of-receivables, or aging-of-receivables. Exhibit 8-3 summarizes the differences in those three methods.

Exhibit 8-3 | Comparison of Percent-of-Sales, Percent-of-Receivables, and Aging-of-Receivables Methods

ALLOWANCE METHOD

INCOME STATEMENT APPROACH:

Percent-of-Sales Method

Bad Debts Expense = Net credit sales × %

BALANCE SHEET APPROACHES:

Percent-of-Receivables Method

Aging-of-Receivables Method

Step 1:
Target balance = Ending balance of Accounts Receivable × %

Step 2:
Bad debts expense = Target balance − Unadj. *credit* balance in Allowance for Bad Debts

OR

Bad debts expense = Target balance + Unadj. *debit* balance in Allowance for Bad Debts

Try It!

Johnson Company uses the allowance method to account for uncollectible receivables. On September 2, Johnson wrote off a $14,000 account receivable from customer J. Mraz. On December 12, Johnson unexpectedly received full payment from Mraz on the previously written off account. Johnson records an adjusting entry for bad debts expense of $800 on December 31.

5. Journalize Johnson's write-off of the uncollectible receivable.
6. Journalize Johnson's collection of the previously written off receivable.
7. Journalize Johnson's adjustment for bad debts expense.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S8-5 through S8-8. MyAccountingLab

HOW ARE NOTES RECEIVABLE ACCOUNTED FOR?

Learning Objective 4

Account for notes receivable including computing interest and recording honored and dishonored notes

Notes receivable are more formal than accounts receivable. The debtor signs a promissory note as evidence of the transaction. Before launching into the accounting, let's define the special terms used for notes receivable:

- **Promissory note**—A written promise to pay a specified amount of money at a particular future date, usually with interest.
- **Maker of the note (debtor)**—The entity that signs the note and promises to pay the required amount; the maker of the note is the debtor.
- **Payee of the note (creditor)**—The entity to whom the maker promises future payment; the payee of the note is the creditor. The creditor is the company that loans the money.
- **Principal**—The amount loaned by the payee and borrowed by the maker of the note.
- **Interest**—The revenue to the payee for loaning money. Interest is an expense to the debtor and revenue to the creditor.
- **Interest period**—The period of time during which interest is computed. It extends from the original date of the note to the maturity date. Also called the *note term*.
- **Interest rate**—The percentage rate of interest specified by the note. Interest rates are almost always stated for a period of one year.
- **Maturity date**—As stated earlier, this is the date when final payment of the note is due. Also called the *due date*.
- **Maturity value**—The sum of the principal plus interest due at maturity. Maturity value is the total amount that will be paid back.

Exhibit 8-4 illustrates a promissory note.

Principal
The amount loaned out by the payee and borrowed by the maker of the note.

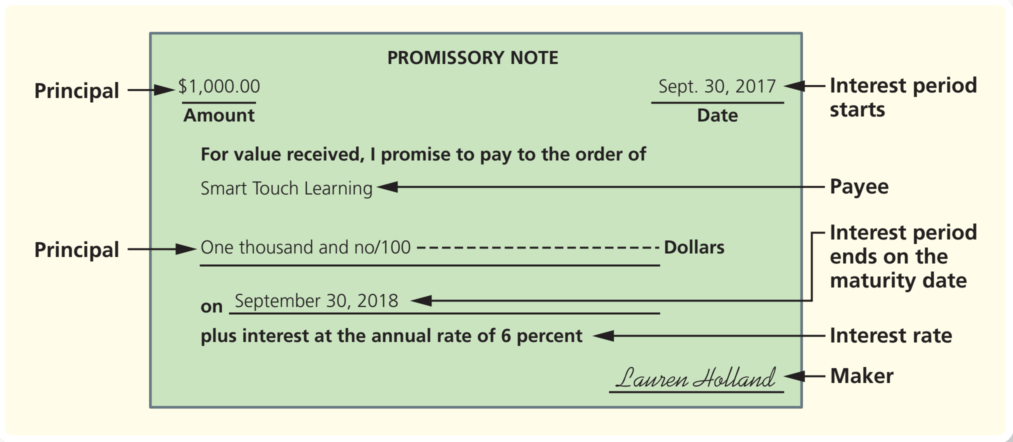
Interest
The revenue to the payee for loaning money—the expense to the debtor.

Interest Period
The period of time during which interest is computed. It extends from the original date of the note to the maturity date.

Interest Rate
The percentage rate of interest specified by the note.

Maturity Value
The sum of the principal plus interest due at maturity.

Exhibit 8-4 | **Promissory Note**



PROMISSORY NOTE

$1,000.00
Amount

Sept. 30, 2017
Date

For value received, I promise to pay to the order of
Smart Touch Learning

One thousand and no/100 ------------------- Dollars

on September 30, 2018

plus interest at the annual rate of 6 percent

Lauren Holland

In Exhibit 8-4, we can see Smart Touch Learning is lending Lauren Holland $1,000 on September 30, 2017, for one year at an annual interest rate of 6%. The accounting clerk would record the following journal entry:

Date	Accounts and Explanation	Debit	Credit
2017			
Sep. 30	Notes Receivable—Holland	1,000	
	Cash		1,000
	Accepted note in exchange for cash.		

A↑↓ = **L** + **E**
Notes Receivable↑
Cash↓

Identifying Maturity Date

Some notes specify the maturity date. For example, September 30, 2018, is the maturity date of the note shown in Exhibit 8-4. Other notes state the period of the note in days or months. When the period is given in months, the note's maturity date falls on the same day of the month as the date the note was issued. For example, a six-month note dated February 16, 2017, would mature on August 16, 2017.

When the period is given in days, the maturity date is determined by counting the actual days from the date of issue. A 180-day note dated February 16, 2017, matures on August 15, 2017, as shown here:

Month	Number of Days	Cumulative Total
Feb. 2017	28 – 16 = 12	12
Mar. 2017	31	43
Apr. 2017	30	73
May 2017	31	104
Jun. 2017	30	134
Jul. 2017	31	165
Aug. 2017	15	180

In counting the days remaining for a note, remember to

- Count the maturity date.
- Omit the date the note was issued.

Computing Interest on a Note

The formula for computing the interest is as follows:

$$\boxed{\text{Amount of interest} = \text{Principal} \times \text{Interest rate} \times \text{Time}}$$

In the formula, time (period) represents the portion of a year that interest has accrued on the note. It may be expressed as a fraction of a year in months (x/12) or a fraction of a year in days (x/360 or x/365). Using the data in Exhibit 8-4, Smart Touch Learning computes interest revenue for one year as follows:

$$\begin{aligned}\text{Amount of interest} &= \text{Principal} \times \text{Interest rate} \times \text{Time}\\ &= \$1{,}000 \times 0.06 \times 12/12\\ &= \$60\end{aligned}$$

The maturity value of the note is $1,060 ($1,000 principal + $60 interest). The time element is 12/12 or 1 because the note's term is one year.

When the term of a note is stated in months, we compute the interest based on the 12-month year. Interest on a $2,000 note at 10% for nine months is computed as follows:

$$\begin{aligned}\text{Amount of interest} &= \text{Principal} \times \text{Interest rate} \times \text{Time}\\ &= \$2{,}000 \times 0.10 \times 9/12\\ &= \$150\end{aligned}$$

When the interest period is stated in days, we sometimes compute interest based on a 360-day year rather than on a 365-day year. (A 360-day year eliminates some rounding and will be used for all calculations in this chapter.) The interest on a $5,000 note at 12% for 60 days can be computed as follows:

$$\begin{aligned}\text{Amount of interest} &= \text{Principal} \times \text{Interest rate} \times \text{Time}\\ &= \$5{,}000 \times 0.12 \times 60/360\\ &= \$100\end{aligned}$$

Keep in mind that interest rates are stated as an annual rate. Therefore, the time in the interest formula should also be expressed in terms of a fraction of one year.

Accruing Interest Revenue and Recording Honored Notes Receivable

Some notes receivable may be outstanding at the end of an accounting period. The interest revenue earned on the note up to year-end is part of that year's earnings. Recall that interest revenue is earned over time, not just when cash is received. Because of the revenue recognition principle, we want to record the earnings from the note in the year in which they were earned.

Now, we continue analyzing Smart Touch Learning's note receivable from Exhibit 8-4. Smart Touch Learning's accounting period ends December 31.

- How much of the total interest revenue does Smart Touch Learning earn in 2017 (from September 30 through December 31)? Smart Touch Learning earns three months (October, November, and December) of interest.

$1,000 × 0.06 × 3/12 = $15

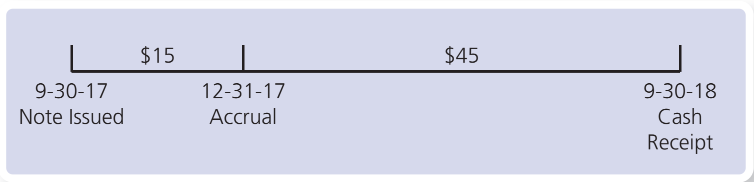
The accounting clerk makes the following adjusting entry at December 31, 2017:

Date	Accounts and Explanation	Debit	Credit
2017			
Dec. 31	Interest Receivable	15	
	Interest Revenue		15
	Accrued interest revenue.		

A↑		L	+	E↑
Interest Receivable↑	=			Interest Revenue↑

- How much interest revenue does Smart Touch Learning earn in 2018 (for January 1 through September 30)? Smart Touch Learning earns nine months (January through September) of interest.

$1,000 × 0.06 × 9/12 = $45



On the maturity date of the note, Smart Touch Learning will receive cash for the principal amount plus interest. The company considers the note honored and makes the following entry:

Date	Accounts and Explanation	Debit	Credit
2018			
Sep. 30	Cash ($1,000 + ($1,000 × 0.06 × 12/12))	1,060	
	Notes Receivable—Holland		1,000
	Interest Receivable		15
	Interest Revenue		45
	Collected note receivable plus interest.		

A↑		L	+	E↑
Cash↑ Notes Receivable↓ Interest Receivable↓	=			Interest Revenue↑

Some companies sell merchandise in exchange for notes receivable. Assume that on July 1, 2017, Rosa Electric sells household appliances for $2,000 to Dorman Builders. Dorman signs a nine-month promissory note at 10% annual interest. Rosa's entries to record the sale (ignore Cost of Goods Sold), interest accrual, and collection from Dorman are as follows:

A↑ = L + E↑
Notes Receivable↑ = Sales Revenue↑

A↑ = L + E↑
Interest Receivable↑ = Interest Revenue↑

A↑ = L + E↑
Cash↑
Notes Receivable↓
Interest Receivable↓ = Interest Revenue↑

Date	Accounts and Explanation	Debit	Credit
2017			
Jul. 1	Notes Receivable—Dorman Builders	2,000	
	Sales Revenue		2,000
Dec. 31	Interest Receivable ($2,000 × 0.10 × 6/12)	100	
	Interest Revenue		100
2018			
Apr. 1	Cash ($2,000 + ($2,000 × 0.10 × 9/12))	2,150	
	Notes Receivable—Dorman Builders		2,000
	Interest Receivable		100
	Interest Revenue ($2,000 × 0.10 × 3/12)		50

A company may accept a note receivable from a credit customer who fails to pay an account receivable. The customer signs a promissory note and gives it to the creditor. Suppose Sports Club cannot pay Blanding Services the amount due on accounts receivable of $5,000. Blanding may accept a 60-day, $5,000 note receivable, with 12% interest, from Sports Club on November 19, 2017. Blanding's entries are as follows:

A↑↓ = L + E
Notes Receivable↑
Accounts Receivable↓

A↑ = L + E↑
Interest Receivable↑ = Interest Revenue↑

A↑ = L + E↑
Cash↑
Notes Receivable↓
Interest Receivable↓ = Interest Revenue↑

Date	Accounts and Explanation	Debit	Credit
2017			
Nov. 19	Notes Receivable—Sports Club	5,000	
	Accounts Receivable—Sports Club		5,000
Dec. 31	Interest Receivable ($5,000 × 0.12 × 42/360)	70	
	Interest Revenue		70
2018			
Jan. 18	Cash ($5,000 + ($5,000 × 0.12 × 60/360))	5,100	
	Notes Receivable—Sports Club		5,000
	Interest Receivable		70
	Interest Revenue ($5,000 × 0.12 × 18/360)		30

Recording Dishonored Notes Receivable

Dishonor a Note
Failure of a note's maker to pay a note receivable at maturity.

If the maker of a note does not pay at maturity, the maker **dishonors a note** (also called *defaulting on a note*). Because the note has expired, it is no longer in force. But the debtor still owes the payee. The payee can transfer the note receivable amount to Accounts Receivable. Suppose Rubinstein Jewelers has a six-month, 10% note receivable for $1,200 from Mark Adair that was signed on March 3, 2017, and Adair defaults. Rubinstein Jewelers will record the default on September 3, 2017, as follows:

Date	Accounts and Explanation	Debit	Credit
2017			
Sep. 3	Accounts Receivable—Adair	1,260	
	Notes Receivable—Adair		1,200
	Interest Revenue ($1,200 × 0.10 × 6/12)		60

A↑		L	+	E↑
Accounts Receivable↑ Notes Receivable↓	=			Interest Revenue↑

Rubinstein will then bill Adair for the account receivable. This also allows Rubinstein to eventually write off the receivable using either the direct write-off method or the allowance method if at a later date Rubinstein can still not collect the account receivable.

Try It!

On August 1, Taylor Company lent $80,000 to L. King on a 90-day, 5% note.

8. Journalize for Taylor Company the lending of the money on August 1.
9. Journalize the collection of the principal and interest at maturity. Specify the date.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S8-9 through S8-12. MyAccountingLab

HOW DO WE USE THE ACID-TEST RATIO, ACCOUNTS RECEIVABLE TURNOVER RATIO, AND DAYS' SALES IN RECEIVABLES TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 5

Use the acid-test ratio, accounts receivable turnover ratio, and days' sales in receivables to evaluate business performance

As discussed earlier in the text, the balance sheet lists assets in the order of liquidity (how quickly an asset can be converted to cash). The partial balance sheet of Green Mountain Coffee Roasters, Inc. shown in Exhibit 8-5 (on the next page) provides an example of this. Balance-sheet data become more useful by showing the relationships among assets, liabilities, and revenues. Let's examine three important ratios using Green Mountain Coffee Roasters, Inc.

Exhibit 8-5 | **Green Mountain Coffee Roasters, Inc. Partial Balance Sheet**

GREEN MOUNTAIN COFFEE ROASTERS, INC.
Balance Sheet (Partial)
September 28, 2013, and September 29, 2012
(in thousands)

Assets	**Sept. 28, 2013**	**Sept. 29, 2012**
Current Assets:		
Cash and Cash Equivalents	$ 260,092	$ 58,289
Restricted Cash and Cash Equivalents	560	12,884
Receivables, less uncollectible accounts and return allowances	467,976	363,771
Inventories	676,089	768,437
Income Taxes Receivable	11,747	32,943
Other Current Assets	46,891	35,019
Deferred Income Taxes, Net	58,137	51,613
Total Current Assets	$ 1,521,492	$ 1,322,956
Total Current Liabilities	$ 597,063	$ 519,987

Acid-Test (or Quick) Ratio

Previously we discussed the current ratio, which measures a company's ability to pay current liabilities with current assets, and the cash ratio, which measures a company's ability to meet its short-term obligations with cash and cash equivalents. We now introduce the **acid-test ratio** (or *quick ratio*), which is also used to measure a company's ability to pay its current liabilities. The acid-test ratio is a more stringent measure than the current ratio but it is not as stringent as the cash ratio. The acid test is a ratio of the sum of a company's quick assets to total current liabilities. Quick assets are defined as cash including cash equivalents, short-term investments, and net current receivables. The acid-test ratio reveals whether the entity could pay all its current liabilities if they were to become due immediately.

The higher the acid-test ratio, the more able the business is to pay its current liabilities. Green Mountain's acid-test ratio of 1.22 means that the business has $1.22 of quick assets to pay each $1.00 of current liabilities.

Acid-Test Ratio
The ratio of the sum of cash, cash equivalents, short-term investments, and net current receivables to total current liabilities. The ratio tells whether the entity could pay all its current liabilities if they came due immediately. (Cash including cash equivalents + Short-term investments + Net current receivables) / Total current liabilities.

Acid-test ratio = (Cash including cash equivalents + Short-term investments + Net current receivables*) / Total current liabilities
= ($260,092 + $560 + $467,976) / $597,063
= 1.22 (rounded)

*Income taxes receivable is not part of net current receivables because it is not a quick asset.

What is an acceptable acid-test ratio? That depends on the industry. In general, an acid-test ratio of 1.00 is considered safe.

Accounts Receivable Turnover Ratio

The **accounts receivable turnover ratio** measures the number of times the company collects the average accounts receivable balance in a year. The higher the ratio, the faster the cash collections. Green Mountain's accounts receivable turnover ratio, presented below, indicates that the business turns over its receivables 10.5 times a year. Green Mountain's net sales are $4,358,100 (in thousands) for the year ended September 28, 2013.

Accounts Receivable Turnover Ratio
A ratio that measures the number of times the company collects the average accounts receivable balance in a year. Net credit sales / Average net accounts receivable.

Accounts receivable turnover ratio = Net credit sales / Average net accounts receivable
= $4,358,100 / [($467,976 + $363,771) / 2]
= 10.48 times (rounded)

In calculating the accounts receivable turnover ratio for Green Mountain, we use net sales instead of net credit sales. This is because most companies don't report the level of detail needed to determine net credit sales.

Days' Sales in Receivables

After making a credit sale, the next step is to collect the receivable. **Days' sales in receivables**, also called the *collection period*, indicates how many days it takes to collect the average level of accounts receivable. The number of days' sales in receivables should be close to the number of days customers are allowed to make payment when credit is extended. The shorter the collection period, the more quickly the organization can use its cash. The longer the collection period, the less cash is available for operations. Green Mountain's days' sales in receivables can be computed as follows:

Days' Sales in Receivables
The ratio of average net accounts receivable to one day's sales. The ratio tells how many days it takes to collect the average level of accounts receivable. 365 days / Accounts receivable turnover ratio.

Days' sales in receivables = 365 days / Accounts receivable turnover ratio
= 365 days / 10.48
= 35 days (rounded)

On average, it takes Green Mountain 35 days to collect its accounts receivable. The length of the collection period depends on the credit terms of the sale. For example, sales on net 30 terms should be collected within approximately 30 days. When there is a discount, such as 2/10, net 30, the collection period may be shorter than 30 days. Credit terms of net 45 result in a longer collection period than 30 days.

Try It!

Lovett Company reported the following selected items at February 29, 2016 (last year's—2015—amounts also given as needed):

Accounts Payable	$ 128,000	Accounts Receivable, net:	
Cash	104,000	February 29, 2016	$ 108,000
Merchandise Inventory:		February 28, 2015	68,000
February 29, 2016	116,000	Cost of Goods Sold	460,000
February 28, 2015	80,000	Short-term Investments	56,000
Net Credit Sales Revenue	1,168,000	Other Current Assets	48,000
Long-term Assets	168,000	Other Current Liabilities	72,000
Long-term Liabilities	52,000		

10. Compute Lovett's (a) acid-test ratio, (b) accounts receivable turnover ratio, and (c) days' sales in receivables for 2016.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S8-13. MyAccountingLab

REVIEW

> Things You Should Know

1. What are common types of receivables, and how are credit sales recorded?

- A receivable is a monetary claim against a business or an individual.
- There are three major types of receivables:
    - Accounts receivable—Represent the right to receive cash in the future from customers for goods sold or for services performed.
    - Notes receivable—Represent a written promise that the customer will pay a fixed amount of principal plus interest by a certain date in the future.
    - Other receivables—A miscellaneous category that includes any other type of receivables where there is a right to receive cash in the future.
- A critical component of internal control over receivables is the separation of cash-handling and cash-accounting duties.
- A separate accounts receivable account (called a subsidiary account) must be maintained for each customer in order to account for payments received from the customer and amounts still owed.
- The sum of all balances in the subsidiary accounts receivable will equal a control account balance, Accounts Receivable.
- Sales by credit cards and debit cards are treated as cash sales and typically include a fee (Credit Card Expense) that is paid by the business to the credit card processor.
- As a way to receive cash before receivables are collected, businesses can factor or pledge their receivables.

2. How are uncollectibles accounted for when using the direct write-off method?

- Writing off uncollectible accounts when using the direct write-off method involves a debit to Bad Debts Expense and a credit to Accounts Receivable.
- Recovery of accounts previously written off is recorded by reversing the write-off entry and then recording an entry to receive the cash.
- The direct write-off method violates the matching principle and is not the method required by GAAP.

3. How are uncollectibles accounted for when using the allowance method?

- When using the allowance method, companies estimate bad debts expense at the end of the period and record an adjusting entry that debits Bad Debts Expense and credits Allowance for Bad Debts. There are three ways to estimate bad debts expense:
    - Percent-of-sales method—Computes bad debts expense as a percentage of net credit sales.
    - Percent-of-receivables method—Determines the balance of the Allowance for Bad Debts account based on a percentage of accounts receivable.
    - Aging-of-receivables method—Determines the balance of the Allowance for Bad Debts account based on the age of individual accounts receivable.
- Writing off uncollectible accounts involves a debit to Allowance for Bad Debts and a credit to Accounts Receivable.

- Recovery of accounts previously written off is recorded by reversing the write-off entry and then recording an entry to receive the cash.
- The allowance method follows the matching principle and is required by GAAP.

4. How are notes receivable accounted for?

- Notes receivable involve interest that is computed as principal times interest rate times time.
- Interest on notes must be accrued at the end of the each period, and an adjusting entry must be recorded by debiting Interest Receivable and crediting Interest Revenue.
- The receipt of cash at a note's maturity includes the principal plus interest.
- When a customer dishonors a note, the business can transfer the note receivable (plus interest earned) to an accounts receivable.

5. How do we use the acid-test ratio, accounts receivable turnover ratio, and days' sales in receivables to evaluate business performance?

- The acid-test ratio reveals whether an entity could pay all its current liabilities if they were due immediately. (Cash including cash equivalents + Short-term investments + Net current receivables) / Total current liabilities.
- Accounts receivable turnover ratio measures the number of times the company collects the average accounts receivable balance in a year. Net credit sales / Average net accounts receivable.
- The days' sales in receivables indicates how many days it takes to collect the average level of accounts receivable. 365 days / Accounts receivable turnover ratio.

> Summary Problem 8-1

Monarch Map Company's balance sheet at December 31, 2015, reported the following:

Accounts Receivable	$ 60,000
Less: Allowance for bad debts	2,000

Requirements

1. How much of the receivables did Monarch expect to collect? Stated differently, what was the net realizable value of these receivables?
2. Journalize, without explanations, 2016 entries for Monarch and post to the Accounts Receivable and Allowance for Bad Debts T-accounts.
   a. Total credit sales for 2016 were $80,000.
   b. Monarch received cash payments on account during 2016 of $74,300.
   c. Accounts receivable identified to be uncollectible totaled $2,700.
3. Record the adjusting entry to recognize bad debts expense using the following independent situations, and then post to the Bad Debts Expense and Allowance for Bad Debts T-accounts.
   a. 3% of credit sales were estimated to be uncollectible.
   b. An aging of receivables indicates that $2,200 of the receivables are estimated to be uncollectible.

> Solution

Requirement 1

Net realizable value of receivables = $60,000 − $2,000 = $58,000

Requirement 2

Date	Accounts and Explanation	Debit	Credit
2016			
(a)	Accounts Receivable	80,000	
	Sales Revenue		80,000
(b)	Cash	74,300	
	Accounts Receivable		74,300
(c)	Allowance for Bad Debts	2,700	
	Accounts Receivable		2,700

Accounts Receivable

Jan. 1, 2016, Bal.	60,000		
(a)	80,000	74,300	(b)
		2,700	(c)
Unadj. Bal.	63,000		

Allowance for Bad Debts

		2,000	Jan. 1, 2016, Bal.
(c)	2,700		
Unadj. Bal.	700		

Requirement 3a

Bad debts expense = Net credit sales × % = $80,000 × 0.03 = $2,400

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Bad Debts Expense	2,400	
	Allowance for Bad Debts		2,400

Allowance for Bad Debts

		2,000	Jan. 1, 2016, Bal.
(c)	2,700		
Unadj. Bal.	700		
		2,400	Adj.
		1,700	**Dec. 31, 2016, Bal.**

Bad Debts Expense

Adj.	2,400		
Dec. 31, 2016, Bal.	**2,400**		

Requirement 3b

Bad debts expense = Target balance + Unadj. debit balance = $2,200 + $700
= $2,900

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Bad Debts Expense	2,900	
	Allowance for Bad Debts		2,900

Allowance for Bad Debts

		2,000	Jan. 1, 2016, Bal.
(c)	2,700		
Unadj. Bal.	700		
		2,900	Adj.
		2,200	**Dec. 31, 2016, Bal.**

Bad Debts Expense

Adj.	2,900	
Dec. 31, 2016, Bal.	**2,900**	

> Summary Problem 8-2

Suppose First Fidelity Bank engaged in the following transactions:

2016	
Apr. 1	Loaned $8,000 to Bland, Co. Received a six-month, 10% note.
Oct. 1	Collected the Bland note at maturity.
Dec. 1	Loaned $6,000 to Flores, Inc. on a 180-day, 12% note.
31	Accrued interest revenue on the Flores note.
2017	
May 30	Collected the Flores note at maturity.

Journalize the 2016 and 2017 transactions on First Fidelity's books. Explanations are not needed. Use a 360-day year to compute interest. First Fidelity's accounting period ends on December 31.

> Solution

Date	Accounts and Explanation	Debit	Credit
2016			
Apr. 1	Notes Receivable—Bland, Co.	8,000	
	Cash		8,000
Oct. 1	Cash ($8,000 + $400)	8,400	
	Notes Receivable—Bland, Co.		8,000
	Interest Revenue ($8,000 × 0.10 × 6/12)		400
Dec. 1	Notes Receivable—Flores, Inc.	6,000	
	Cash		6,000
Dec. 31	Interest Receivable	60	
	Interest Revenue ($6,000 × 0.12 × 30/360)		60
2017			
May 30	Cash ($6,000 + ($6,000 × 0.12 × 180/360))	6,360	
	Notes Receivable—Flores, Inc.		6,000
	Interest Receivable		60
	Interest Revenue ($6,000 × 0.12 × 150/360)		300

> Key Terms

Accounts Receivable (p. 448)
Accounts Receivable Turnover Ratio (p. 470)
Acid-Test Ratio (p. 470)
Aging-of-Receivables Method (p. 461)
Allowance for Bad Debts (p. 455)
Allowance Method (p. 455)
Bad Debts Expense (p. 453)
Days' Sales in Receivables (p. 471)
Debtor (p. 448)
Direct Write-off Method (p. 453)
Dishonor a Note (p. 468)
Interest (p. 464)
Interest Period (p. 464)
Interest Rate (p. 464)
Maturity Date (p. 448)
Maturity Value (p. 464)
Net Realizable Value (p. 455)
Notes Receivable (p. 448)
Percent-of-Receivables Method (p. 459)
Percent-of-Sales Method (p. 457)
Principal (p. 464)
Receivable (p. 448)

> Quick Check

Learning Objective 1

1. With good internal controls, the person who handles cash can also
   a. account for cash payments.
   b. account for cash receipts from customers.
   c. issue credits to customers for sales returns.
   d. None of the above

Learning Objective 1

2. When recording credit card or debit card sales using the net method,

   a. cash received equals sales.
   b. cash received equals sales minus the fee assessed by the card processing company.
   c. cash received equals sales plus the fee assessed by the card processing company.
   d. cash isn't received by the seller until the customer pays his or her credit card statement.

Learning Objective 2

3. Which of the following is a limitation of the direct write-off method of accounting for uncollectibles?

   a. The direct write-off method overstates assets on the balance sheet.
   b. The direct write-off method does not match expenses against revenue very well.
   c. The direct write-off method does not set up an allowance for uncollectibles.
   d. All of the above

Learning Objective 2

4. The entry to record a write-off of an uncollectible account when using the direct write-off method involves a

   a. debit to Allowance for Bad Debts.
   b. credit to Cash.
   c. debit to Accounts Receivable.
   d. debit to Bad Debts Expense.

Learning Objective 3

5. Brickman Corporation uses the allowance method to account for uncollectible receivables. At the beginning of the year, Allowance for Bad Debts had a credit balance of $1,000. During the year Brickman wrote off uncollectible receivables of $2,100. Brickman recorded Bad Debts Expense of $2,700. What is Brickman's year-end balance in Allowance for Bad Debts?

   a. $1,600 **b.** $4,800 **c.** $3,700 **d.** $600

Learning Objective 3

6. Brickman's ending balance of Accounts Receivable is $19,500. Use the data in the preceding question to compute the net realizable value of Accounts Receivable at year-end.

   a. $16,800 **b.** $19,500 **c.** $17,400 **d.** $17,900

Learning Objective 4

7. At December 31 year-end, Crain Corporation has an $8,400 note receivable from a customer. Interest of 10% has accrued for 10 months on the note. What will Crain's financial statements report for this situation?

   a. The balance sheet will report the note receivable of $8,400.
   b. The balance sheet will report the note receivable of $8,400 and interest receivable of $700.
   c. Nothing because the business has not received the cash yet.
   d. The income statement will report a note receivable of $8,400.

Learning Objective 4

8. Using the data in the preceding question, what will the income statement for the year ended December 31 report for this situation?

   a. Nothing because the business has not received the cash yet
   b. Note receivable of $8,400
   c. Interest revenue of $700
   d. Both b and c

Learning Objective 5

9. At year-end, Schultz, Inc. has cash of $11,600, current accounts receivable of $48,900, merchandise inventory of $37,900, and prepaid expenses totaling $5,100. Liabilities of $55,900 must be paid next year. What is Schultz's acid-test ratio?
   - **a.** 1.08
   - **b.** 0.21
   - **c.** 1.76
   - **d.** Cannot be determined from the data given

Learning Objective 5

10. Using the data in the preceding question, assume accounts receivable had a beginning balance of $67,400 and net credit sales for the current year totaled $807,800. How many days did it take Schultz to collect its average level of receivables?
    - **a.** 49
    - **b.** 35
    - **c.** 29
    - **d.** 26

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is the difference between accounts receivable and notes receivable?
2. List some common examples of other receivables, besides accounts receivable and notes receivable.
3. What is a critical element of internal control in the handling of receivables by a business? Explain how this element is accomplished.
4. When dealing with receivables, give an example of a subsidiary account.
5. What type of account must the sum of all subsidiary accounts be equal to?
6. What are some benefits to a business in accepting credit cards and debit cards?
7. What are two common methods used when accepting deposits for credit card and debit card transactions?
8. What occurs when a business factors its receivables?
9. What occurs when a business pledges its receivables?
10. What is the expense account associated with the cost of uncollectible receivables called?
11. When is bad debts expense recorded when using the direct write-off method?
12. What are some limitations of using the direct write-off method?
13. When is bad debts expense recorded when using the allowance method?
14. When using the allowance method, how are accounts receivable shown on the balance sheet?
15. When using the allowance method, what account is debited when writing off uncollectible accounts? How does this differ from the direct write-off method?
16. When a receivable is written off under the allowance method, how does it affect the net realizable value shown on the balance sheet?
17. How does the percent-of-sales method compute bad debts expense?
18. How do the percent-of-receivables and aging-of-receivables methods compute bad debts expense?

19. What is the difference between the percent-of-receivables and aging-of-receivables methods?
20. What is the formula to compute interest on a note receivable?
21. Why must companies record accrued interest revenue at the end of the accounting period?
22. How is the acid-test ratio calculated, and what does it signify?
23. What does the accounts receivable turnover ratio measure, and how is it calculated?
24. What does the days' sales in receivables indicate, and how is it calculated?

> Short Exercises

S8-1 Ensuring internal control over the collection of receivables

Learning Objective 1

Consider internal control over receivables collections. What job must be withheld from a company's credit department in order to safeguard its cash? If the credit department does perform this job, what can a credit department employee do to hurt the company?

S8-2 Recording credit card and debit card sales

Learning Objective 1

Restaurants do a large volume of business by credit and debit cards. Suppose Sand Island restaurant had these transactions on January 28, 2016:

National Express credit card sales	$ 9,100
ValueCard debit card sales	7,000

Requirements

1. Suppose Sand Island's processor charges a 6% fee and deposits sales net of the fee. Journalize these sales transactions for the restaurant.
2. Suppose Sand Island's processor charges a 6% fee and deposits sales using the gross method. Journalize these sales transactions for the restaurant.

S8-3 Applying the direct write-off method to account for uncollectibles

Learning Objective 2

Susan Knoll is an attorney in Los Angeles. Knoll uses the direct write-off method to account for uncollectible receivables.

At January 31, 2016, Knoll's accounts receivable totaled $18,000. During February, she earned revenue of $21,000 on account and collected $23,000 on account. She also wrote off uncollectible receivables of $1,050 on February 29, 2016.

Requirements

1. Use the direct write-off method to journalize Knoll's write-off of the uncollectible receivables.
2. What is Knoll's balance of Accounts Receivable at February 29, 2016?

S8-4 Collecting a receivable previously written off—direct write-off method

Learning Objective 2

Gate City Cycles had trouble collecting its account receivable from Shawna Brown. On June 19, 2016, Gate City finally wrote off Brown's $700 account receivable. On December 31, Brown sent a $700 check to Gate City.

Journalize the entries required for Gate City Cycles, assuming Gate City uses the direct write-off method.

Learning Objective 3

S8-5 Applying the allowance method to account for uncollectibles

The Accounts Receivable balance and Allowance for Bad Debts for Turning Leaves Furniture Restoration at December 31, 2015, was $10,800 and $2,000 (credit balance). During 2016, Turning Leaves completed the following transactions:

a. Sales revenue on account, $265,800 (ignore Cost of Goods Sold).

b. Collections on account, $220,000.

c. Write-offs of uncollectibles, $6,100.

d. Bad debts expense of $5,000 was recorded.

Requirements

1. Journalize Turning Leaves's transactions for 2016 assuming Turning Leaves uses the allowance method.
2. Post the transactions to the Accounts Receivable, Allowance for Bad Debts, and Bad Debts Expense T-accounts, and determine the ending balance of each account.
3. Show how accounts receivable would be reported on the balance sheet at December 31, 2016.

Learning Objective 3

S8-6 Applying the allowance method (percent-of-sales) to account for uncollectibles

During its first year of operations, Fall Wine Tour earned net credit sales of $379,000. Industry experience suggests that bad debts will amount to 2% of net credit sales. At December 31, 2016, accounts receivable total $38,000. The company uses the allowance method to account for uncollectibles.

Requirements

1. Journalize Fall's Bad Debts Expense using the percent-of-sales method.
2. Show how to report accounts receivable on the balance sheet at December 31, 2016.

Learning Objective 3

S8-7 Applying the allowance method (percent-of-receivables) to account for uncollectibles

The Accounts Receivable balance for Lake, Inc. at December 31, 2015, was $24,000. During 2016, Lake earned revenue of $452,000 on account and collected $330,000. Lake wrote off $6,200 receivables as uncollectible. Industry experience suggests that uncollectible accounts will amount to 3% of accounts receivable.

Requirements

1. Assume Lake had an unadjusted $1,800 credit balance in Allowance for Bad Debts at December 31, 2016. Journalize Lake's December 31, 2016, adjustment to record bad debts expense using the percent-of-receivables method.
2. Assume Lake had an unadjusted $1,600 debit balance in Allowance for Bad Debts at December 31, 2016. Journalize Lake's December 31, 2016, adjustment to record bad debts expense using the percent-of-receivables method.

Learning Objective 3

S8-8 Applying the allowance method (aging-of-receivables) to account for uncollectibles

Precious Figurines Collection had the following balances at December 31, 2016, before the year-end adjustments:

Accounts Receivable	
77,000	

Allowance for Bad Debts	
	1,654

The aging of accounts receivable yields the following data:

	Age of Accounts Receivable		
	0–60 Days	Over 60 Days	Total Receivables
Accounts Receivable	$ 74,000	$ 3,000	$ 77,000
Estimated percent uncollectible	× 3%	× 22%	

Requirements

1. Journalize Precious Figurines' entry to record bad debts expense for 2016 using the aging-of-receivables method.
2. Prepare a T-account to compute the ending balance of Allowance for Bad Debts.

Learning Objective 4

S8-9 Computing interest amounts on notes receivable

A table of notes receivable for 2016 follows:

	Principal	Interest Rate	Interest Period During 2016
Note 1	$ 60,000	12%	9 months
Note 2	6,000	14%	270 days
Note 3	32,000	6%	75 days
Note 4	150,000	5%	3 months

For each of the notes receivable, compute the amount of interest revenue earned during 2016. Round to the nearest dollar.

Learning Objective 4

S8-10 Accounting for a note receivable

On June 6, Lakeland Bank & Trust lent $90,000 to Samantha Michael on a 60-day, 6% note.

Requirements

1. Journalize for Lakeland the lending of the money on June 6.
2. Journalize the collection of the principal and interest at maturity. Specify the date.

Learning Objective 4

S8-11 Accruing interest revenue and recording collection of a note

On March 1, Kyle Corporation accepted a 60-day, 6%, $9,000 note receivable from J. Summers in exchange for his account receivable.

Requirements

1. Journalize the transaction on March 1.
2. Journalize the adjusting entry needed on March 31 to accrue interest revenue.
3. Journalize the collection of the principal and interest at maturity. Specify the date.

Learning Objective 4

S8-12 Recording a dishonored note receivable

McKris Corporation has a three-month, $12,000, 9% note receivable from L. Stow that was signed on June 1, 2016. Stow defaults on the loan on September 1.

Journalize the entry for McKris to record the default of the loan.

Learning Objective 5

S8-13 Using the acid-test ratio, accounts receivable turnover ratio, and days' sales in receivables to evaluate a company

Lantana Clothiers reported the following selected items at May 31, 2016 (last year's—2015—amounts also given as needed):

Accounts Payable	$ 331,000	Accounts Receivable, net:	
Cash	302,900	May 31, 2016	$ 303,000
Merchandise Inventory:		May 31, 2015	152,000
May 31, 2016	230,000	Cost of Goods Sold	1,150,000
May 31, 2015	190,000	Short-term Investments	151,000
Net Credit Sales Revenue	3,321,500	Other Current Assets	70,000
Long-term Assets	450,000	Other Current Liabilities	191,000
Long-term Liabilities	100,000		

Compute Lantana's (a) acid-test ratio, (b) accounts receivable turnover ratio, and (c) days' sales in receivables for 2016. Evaluate each ratio value as strong or weak. Lantana sells on terms of net 30. (Round days' sales in receivables to a whole number.)

> Exercises

Learning Objective 1

E8-14 Defining common receivables terms

Match the terms with their correct definition.

Terms	Definitions
1. Accounts receivable	a. The party to a credit transaction who takes on an obligation/payable.
2. Other receivables	b. The party who receives a receivable and will collect cash in the future.
3. Debtor	c. A written promise to pay a specified amount of money at a particular future date.
4. Notes receivable	d. The date when the note receivable is due.
5. Maturity date	e. A miscellaneous category that includes any other type of receivable where there is a right to receive cash in the future.
6. Creditor	f. The right to receive cash in the future from customers for goods sold or for services performed.

Learning Objective 1

E8-15 Identifying and correcting internal control weakness

Suppose The Right Rig Dealership is opening a regional office in Omaha. Cary Regal, the office manager, is designing the internal control system. Regal proposes the following procedures for credit checks on new customers, sales on account, cash collections, and write-offs of uncollectible receivables:

- The credit department runs a credit check on all customers who apply for credit. When an account proves uncollectible, the credit department authorizes the write-off of the accounts receivable.
- Cash receipts come into the credit department, which separates the cash received from the customer remittance slips. The credit department lists all cash receipts by customer name and amount of cash received.
- The cash goes to the treasurer for deposit in the bank. The remittance slips go to the accounting department for posting to customer accounts.
- The controller compares the daily deposit slip to the total amount posted to customer accounts. Both amounts must agree.

Recall the components of internal control. Identify the internal control weakness in this situation, and propose a way to correct it.

Learning Objectives 1, 2

E8-16 Journalizing transactions using the direct write-off method

On June 1, Best Performance Cell Phones sold $21,000 of merchandise to Anthony Trucking Company on account. Anthony fell on hard times and on July 15 paid only $8,000 of the account receivable. After repeated attempts to collect, Best Performance finally wrote off its accounts receivable from Anthony on September 5. Six months later, March 5, Best Performance received Anthony's check for $13,000 with a note apologizing for the late payment.

Requirements

1. Journalize the transactions for Best Performance Cell Phones using the direct write-off method Ignore Cost of Goods Sold.
2. What are some limitations that Best Performance will encounter when using the direct write-off method?

Use the following information to answer Exercises E8-17 and E8-18.

At January 1, 2016, Blue Mountain Flagpoles had Accounts Receivable of $33,000, and Allowance for Bad Debts had a credit balance of $3,000. During the year, Blue Mountain Flagpoles recorded the following:

a. Sales of $170,000 ($155,000 on account; $15,000 for cash). Ignore Cost of Goods Sold.

b. Collections on account, $136,000.

c. Write-offs of uncollectible receivables, $2,100.

Learning Objectives 1, 3

2. AR, Dec. 31 $54,800

E8-17 Accounting for uncollectible accounts using the allowance method (percent-of-sales) and reporting receivables on the balance sheet

Requirements

1. Journalize Blue's transactions that occurred during 2016. The company uses the allowance method.
2. Post Blue's transactions to the Accounts Receivable and Allowance for Bad Debts T-accounts.
3. Journalize Blue's adjustment to record bad debts expense assuming Blue estimates bad debts as 4% of credit sales. Post the adjustment to the appropriate T-accounts.
4. Show how Blue Mountain Flagpoles will report net accounts receivable on its December 31, 2016, balance sheet.

Learning Objectives 1, 3

3. Bad Debts Expense $844

E8-18 Accounting for uncollectible accounts using the allowance method (percent-of-receivables) and reporting receivables on the balance sheet

Requirements

1. Journalize Hilltop Flagpoles transactions that occurred during 2016. The company uses the allowance method.
2. Post Hilltop Flagpoles transactions to the Accounts Receivable and Allowance for Bad Debts T-accounts.
3. Journalize Hilltop Flagpoles adjustment to record bad debts expense assuming Hilly estimates bad debts as 3% of accounts receivable. Post the adjustment to the appropriate T-accounts.
4. Show how Hilltop Flagpoles will report net accounts receivable on its December 31, 2016, balance sheet.

Learning Objective 3

2. Allowance CR Bal. $25,100

E8-19 Accounting for uncollectible accounts using the allowance method (aging-of-receivables) and reporting receivables on the balance sheet

At December 31, 2016, the Accounts Receivable balance of Lexington Financial Software is $205,000. The Allowance for Bad Debts account has a $16,530 debit balance. Lexington Financial Software prepares the following aging schedule for its accounts receivable:

	Age of Accounts			
	1–30 Days	31–60 Days	61–90 Days	Over 90 Days
Accounts Receivable	$ 90,000	$ 75,000	$ 15,000	$ 20,000
Estimated percent uncollectible	0.2%	5.0%	9.0%	50.0%

Requirements

1. Journalize the year-end adjusting entry for bad debts on the basis of the aging schedule. Show the T-account for the Allowance for Bad Debts at December 31, 2016.
2. Show how Lexington Financial Software will report its net accounts receivable on its December 31, 2016, balance sheet.

Learning Objectives 1, 2, 3

E8-20 Journalizing transactions using the direct write-off method versus the allowance method

During August 2016, Ritter Company recorded the following:

- Sales of $62,100 ($55,000 on account; $7,100 for cash). Ignore Cost of Goods Sold.
- Collections on account, $37,800.
- Write-offs of uncollectible receivables, $1,690.
- Recovery of receivable previously written off, $500.

Requirements

1. Journalize Ritter's transactions during August 2016, assuming Ritter uses the direct write-off method.
2. Journalize Ritter's transactions during August 2016, assuming Ritter uses the allowance method.

E8-21 Journalizing credit card sales, note receivable transactions, and accruing interest

Learning Objectives 1, 4

Endurance Running Shoes reports the following:

2016	
Mar. 6	Recorded credit card sales of $91,000, net of processor fee of 3%. Ignore Cost of Goods Sold.
Jul. 1	Loaned $20,000 to Jerry Paul, an executive with the company, on a one-year, 15% note.
Dec. 31	Accrued interest revenue on the Paul note.
2017	
Jul. 1	Collected the maturity value of the Paul note.

Journalize all entries required for Endurance Running Shoes.

E8-22 Journalizing note receivable transactions including a dishonored note

Learning Objective 4

On September 30, 2016, Statewide Bank loaned $90,000 to Katrina Harmon on a one-year, 6% note. Statewide's fiscal year ends on December 31.

Requirements

1. Journalize all entries for Statewide Bank related to the note for 2016 and 2017.
2. Which party has a
   a. note receivable?
   b. note payable?
   c. interest revenue?
   d. interest expense?
3. Suppose that Katrina Harmon defaulted on the note. What entry would Statewide record for the dishonored note?

E8-23 Journalizing note receivable transactions

Learning Objective 4

Feb. 1, 2017 Cash DR $21,200

The following selected transactions occurred during 2016 and 2017 for Norwegian Importers. The company ends its accounting year on November 30.

2016	
Sep. 1	Loaned $19,000 cash to Brett Dowling on a one-year, 10% note.
Nov. 6	Sold goods to Fairway Pro, receiving a 90-day, 6% note for $6,000. Ignore Cost of Goods Sold.
Nov. 30	Made a single entry to accrue interest revenue on both notes.
?	Collected the maturity value of the Fairway Pro note.
2017	
Seb. 1	Collected the maturity value of the Dowling note.

Journalize all required entries. Make sure to determine the missing maturity date.

Learning Objective 4

Oct. 31 Cash DR $24,240

E8-24 Journalizing note receivable transactions

Beautiful Steam Cleaning performs services on account. When a customer account becomes four months old, Beautiful converts the account to a note receivable. During 2016, the company completed the following transactions:

Apr. 28	Performed service on account for Parkview Club, $25,000.
Sep. 1	Received a $25,000, 60-day, 12% note from Parkview Club in satisfaction of its past-due account receivable.
Oct. 31	Collected the Parkview Club note at maturity.

Record the transactions in Beautiful's journal.

Learning Objective 5

E8-25 Evaluating ratio data

Apache Carpets reported the following amounts in its 2016 financial statements. The 2015 figures are given for comparison.

	2016		2015	
Current Assets:				
Cash		$ 3,000		$ 9,000
Short-term Investments		21,000		10,000
Accounts Receivable	$ 59,000		$ 72,000	
Less: Allowance for Bad Debts	(7,000)	52,000	(6,000)	66,000
Merchandise Inventory		191,000		187,000
Prepaid Insurance		3,000		3,000
Total Current Assets		$ 270,000		$ 275,000
Total Current Liabilities		$ 105,000		$ 107,000
Net Sales (all on account)		$ 654,900		$ 733,000

Requirements

1. Calculate Apache's acid-test ratio for 2016. (Round to two decimals.) Determine whether Apache's acid-test ratio improved or deteriorated from 2015 to 2016. How does Apache's acid-test ratio compare with the industry average of 0.80?
2. Calculate Apache's accounts receivable turnover ratio. (Round to two decimals.) How does Apache's ratio compare to the industry average accounts receivable turnover of 10?
3. Calculate the days' sales in receivables for 2016. (Round to the nearest day.) How do the results compare with Apache's credit terms of net 30?

Learning Objective 5

E8-26 Computing the collection period for receivables

Distinctive Media Sign Incorporated sells on account. Recently, Distinctive reported the following figures:

	2016	2015
Net Credit Sales	$ 567,910	$ 604,500
Receivables at end of year	38,300	47,100

Requirements

1. Compute Distinctive's days' sales in receivables for 2016. (Round to the nearest day.)
2. Suppose Distinctive's normal credit terms for a sale on account are "2/10, net 30." How well does Distinctive's collection period compare to the company's credit terms? Is this good or bad for Distinctive?

> Problems Group A

Learning Objectives 1, 2, 3

1. Bad Debts Expense $5,400

P8-27A Accounting for uncollectible accounts using the allowance (percent-of-sales) and direct write-off methods and reporting receivables on the balance sheet

On August 31, 2016, Forget–me–not Floral Supply had a $180,000 debit balance in Accounts Receivable and a $7,200 credit balance in Allowance for Bad Debts. During September, Forget–me–not made

- Sales on account, $580,000. Ignore Cost of Goods Sold.
- Collections on account, $613,000.
- Write-offs of uncollectible receivables, $7,000.

Requirements

1. Journalize all September entries using the *allowance* method. Bad debts expense was estimated at 1% of credit sales. Show all September activity in Accounts Receivable, Allowance for Bad Debts, and Bad Debts Expense (post to these T-accounts).
2. Using the same facts, assume that Forget–me–not used the direct write-off method to account for uncollectible receivables. Journalize all September entries using the *direct write-off* method. Post to Accounts Receivable and Bad Debts Expense, and show their balances at September 30, 2016.
3. What amount of Bad Debts Expense would Forget–me–not report on its September income statement under each of the two methods? Which amount better matches expense with revenue? Give your reason.
4. What amount of *net* accounts receivable would Forget–me–not report on its September 30, 2016, balance sheet under each of the two methods? Which amount is more realistic? Give your reason.

Learning Objective 3

2. Allowance CR Bal. $7,539 at Dec. 31, 2016

P8-28A Accounting for uncollectible accounts using the allowance method (aging-of-receivables) and reporting receivables on the balance sheet

At September 30, 2016, the accounts of Mountain Terrace Medical Center (MTMC) include

Accounts Receivable	$ 143,000
Allowance for Bad Debts (credit balance)	3,300

During the last quarter of 2016, MTMC completed the following selected transactions:

Dec. 28	Wrote off accounts receivable as uncollectible: Red Co., $1,400; Oscar Waters, $700; and Paradise, Inc., $500.
31	Recorded bad debts expense based on the aging of accounts receivable, as follows:

	Age of Accounts			
	1–30 Days	31–60 Days	61–90 Days	Over 90 Days
Accounts Receivable	$ 99,000	$ 37,000	$ 16,000	$ 10,000
Estimated percent uncollectible	0.2%	2%	20%	25%

Requirements

1. Journalize the transactions.
2. Open the Allowance for Bad Debts T-account, and post entries affecting that account. Keep a running balance.
3. Show how Mountain Terrace Medical Center should report net accounts receivable on its December 31, 2016, balance sheet.

Learning Objectives 1, 3

3. Net AR $107,300

P8-29A Accounting for uncollectible accounts using the allowance method (percent-of-sales) and reporting receivables on the balance sheet

Dialex Watches completed the following selected transactions during 2016 and 2017:

2016	
Dec. 31	Estimated that bad debts expense for the year was 3% of credit sales of $400,000 and recorded that amount as expense. The company uses the allowance method.
31	Made the closing entry for bad debts expense.
2017	
Jan. 17	Sold merchandise inventory to Marty Viller, $900, on account. Ignore Cost of Goods Sold.
Jun. 29	Wrote off Marty Viller's account as uncollectible after repeated efforts to collect from him.
Aug. 6	Received $900 from Marty Viller, along with a letter apologizing for being so late. Reinstated Viller's account in full and recorded the cash receipt.
Dec. 31	Made a compound entry to write off the following accounts as uncollectible: Bob Keffer, $1,900; Mary Martin, $1,000; and Robert Ronson, $400.
31	Estimated that bad debts expense for the year was 3% on credit sales of $500,000 and recorded the expense.
31	Made the closing entry for bad debts expense.

Requirements

1. Open T-accounts for Allowance for Bad Debts and Bad Debts Expense. Keep running balances, assuming all accounts begin with a zero balance.
2. Record the transactions in the general journal, and post to the two T-accounts.
3. Assume the December 31, 2017, balance of Accounts Receivable is $131,000. Show how net accounts receivable would be reported on the balance sheet at that date.

P8-30A Accounting for uncollectible accounts (aging-of-receivables method), credit card sales, notes receivable, and accrued interest revenue

Learning Objectives 1, 3, 4

Dec. 31, 2016 Interest Receivable $3,600

New Style Recliner Chairs completed the following selected transactions:

2016	
Jul. 1	Sold merchandise inventory to Green- Mart, receiving a $36,000, nine-month, 8% note. Ignore Cost of Goods Sold.
Oct. 31	Recorded credit and debit card sales for the period of $16,000. Use the gross method. Ignore Cost of Goods Sold.
Nov. 3	Card processor drafted company's checking account for processing fee of $430.
Dec. 31	Made an adjusting entry to accrue interest on the Green-Mart note.
31	Made an adjusting entry to record bad debt expense based on an aging of accounts receivable. The aging schedule shows that $15,200 of accounts receivable will not be collected. Prior to this adjustment, the credit balance in Allowance for Bad Debts is $11,600.
2017	
Apr. 1	Collected the maturity value of the Green-Mart note.
Jun. 23	Sold merchandise inventory to Creative, Corp., receiving a 60-day, 9% note for $9,000. Ignore Cost of Goods Sold.
Aug. 22	Creative, Corp. dishonored its note at maturity; the business converted the maturity value of the note to an account receivable.
Nov. 16	Loaned $21,000 cash to Crosby, Inc., receiving a 90-day, 12% note.
Dec. 5	Collected in full on account from Creative, Corp.
31	Accrued the interest on the Crosby, Inc. note.

Record the transactions in the journal of New Style Recliner Chairs. Explanations are not required. (For notes stated in days, use a 360-day year. Round to the nearest dollar.)

P8-31A Accounting for notes receivable and accruing interest

Learning Objective 4

1. Note 3 Dec. 18, 2016

Kelly Realty loaned money and received the following notes during 2016.

Note	Date	Principal Amount	Interest Rate	Term
(1)	Oct. 1	$ 24,000	7%	1 year
(2)	Sep. 30	18,000	6%	6 months
(3)	Oct. 19	12,000	8%	90 days

Requirements

1. Determine the maturity date and maturity value of each note.
2. Journalize the entries to establish each Note Receivable. Include a single adjusting entry on December 31, 2016, the fiscal year-end, to record accrued interest revenue on any applicable note. Explanations are not required.
3. Journalize the collection of principal and interest at maturity on the three notes. Explanations are not required.

Learning Objective 4

Dec. 31, 2016 Income Summary CR $75

P8-32A Accounting for notes receivable, dishonored notes, and accrued interest revenue

Consider the following transactions for CC Publishing.

2016	
Dec. 6	Received a $6,000, 90-day, 12% note in settlement of an overdue accounts receivable from Free World Music.
31	Made an adjusting entry to accrue interest on the Free World Music note.
31	Made a closing entry for interest revenue.
2017	
Mar. 6	Collected the maturity value of the Free World Music note.
Jun. 30	Loaned $10,000 cash to Love Joy Music, receiving a six-month, 12% note.
Oct. 2	Received a $2,400, 60-day, 12% note for a sale to Taconic Music. Ignore Cost of Goods Sold.
Dec. 1	Taconic Music dishonored its note at maturity.
1	Wrote off the receivable associated with Taconic Music. (Use the allowance method.)
30	Collected the maturity value of the Love Joy Music note.

Journalize all transactions for CC Publishing. Round all amounts to the nearest dollar. (For notes stated in days, use a 360-day year.)

Learning Objective 5

1. Acid-test ratio (2016) 0.86

P8-33A Using ratio data to evaluate a company's financial position

The comparative financial statements of Perfect Cosmetic Supply for 2016, 2015, and 2014 include the data shown here:

	2016	2015	2014
Balance sheet—partial			
Current Assets:			
Cash	$ 60,000	$ 80,000	$ 60,000
Short-term investments	135,000	150,000	130,000
Accounts Receivable, Net	270,000	280,000	260,000
Merchandise Inventory	370,000	340,000	315,000
Prepaid Expenses	70,000	20,000	35,000
Total Current Assets	905,000	870,000	800,000
Total Current Liabilities	540,000	570,000	690,000
Income statement—partial			
Net Sales (all on account)	5,860,000	5,120,000	4,200,000

Requirements

1. Compute these ratios for 2016 and 2015:
    a. Acid-test ratio (Round to two decimals.)
    b. Accounts receivable turnover (Round to two decimals.)
    c. Days' sales in receivables (Round to the nearest whole day.)
2. Considering each ratio individually, which ratios improved from 2015 to 2016 and which ratios deteriorated? Is the trend favorable or unfavorable for the company?

> Problems Group B

P8-34B Accounting for uncollectible accounts using the allowance (percent-of-sales) and direct write-off methods and reporting receivables on the balance sheet

Learning Objectives 1, 2, 3

1. Sep. 30 Bal. AR $128,000

On August 31, 2016, Rosebud Floral Supply had a $170,000 debit balance in Accounts Receivable and a $6,800 credit balance in Allowance for Bad Debts. During September, Rosebud made the following transactions:

- Sales on account, $550,000. Ignore Cost of Goods Sold.
- Collections on account, $584,000.
- Write-offs of uncollectible receivables, $8,000.

Requirements

1. Journalize all September entries using the *allowance* method. Bad debts expense was estimated at 2% of credit sales. Show all September activity in Accounts Receivable, Allowance for Bad Debts, and Bad Debts Expense (post to these T-accounts).
2. Using the same facts, assume that Rosebud used the direct write-off method to account for uncollectible receivables. Journalize all September entries using the *direct write-off* method. Post to Accounts Receivable and Bad Debts Expense, and show their balances at November 30, 2016.
3. What amount of Bad Debts Expense would Rosebud report on its September income statement under each of the two methods? Which amount better matches expense with revenue? Give your reason.
4. What amount of *net* accounts receivable would Rosebud report on its September 30, 2016, balance sheet under each of the two methods? Which amount is more realistic? Give your reason.

P8-35B Accounting for uncollectible accounts using the allowance method (aging-of-receivables) and reporting receivables on the balance sheet

Learning Objective 3

2. Dec. 31, 2016 Allowance CR Bal. $4,616

At September 30, 2016, the accounts of Spring Heights Medical Center (SHMC) include the following:

Accounts Receivable	$ 143,000
Allowance for Bad Debts (credit balance)	3,300

During the last quarter of 2016, SHMC completed the following selected transactions:

Dec. 28	Wrote off accounts receivable as uncollectible: Silver, Co., $1,400; Owen Reis, $700; and Pristine, Inc., $700
31	Recorded bad debts expense based on the aging of accounts receivable, as follows:

	Age of Accounts			
	1–30 Days	31–60 Days	61–90 Days	Over 90 Days
Accounts Receivable	$ 103,000	$ 43,000	$ 14,000	$ 3,000
Estimated percent uncollectible	0.2%	2%	20%	25%

Requirements

1. Journalize the transactions.
2. Open the Allowance for Bad Debts T-account, and post entries affecting that account. Keep a running balance.
3. Show how Spring Heights Medical Center should report net accounts receivable on its December 31, 2016, balance sheet.

Learning Objectives 1, 3

1. Dec. 31, 2017, Allowance CR Bal. $5,900

P8-36B Accounting for uncollectible accounts using the allowance method (percent-of-sales) and reporting receivables on the balance sheet

Quality Watches completed the following selected transactions during 2016 and 2017:

2016	
Dec. 31	Estimated that bad debts expense for the year was 3% of credit sales of $420,000 and recorded that amount as expense. The company uses the allowance method.
31	Made the closing entry for bad debts expense.
2017	
Jan. 17	Sold merchandise inventory to Mack Smith, $700, on account. Ignore Cost of Goods Sold.
Jun. 29	Wrote off Mack Smith's account as uncollectible after repeated efforts to collect from him.
Aug. 6	Received $700 from Mack Smith, along with a letter apologizing for being so late. Reinstated Monet's account in full and recorded the cash receipt.
Dec. 31	Made a compound entry to write off the following accounts as uncollectible: Bernard Klaus Mike Venture, $1,500; and Richard Renik, $500.
31	Estimated that bad debts expense for the year was 3% on credit sales of $450,000 and recorded the expense.
31	Made the closing entry for bad debts expense.

Requirements

1. The T-accounts for Allowance for Bad Debts and Bad Debts Expense have been opened for you. Record the transactions in the general journal. Post to the two T-accounts and keep running balances, assuming all accounts begin with a zero balance.
2. Assume the December 31, 2017, balance of Accounts Receivable is $137,000. Show how net accounts receivable would be reported on the balance sheet at that date.

P8-37B Accounting for uncollectible accounts (aging-of-receivables method), credit card sales, notes receivable, and accrued interest revenue

Learning Objectives 1, 3, 4

Dec. 31, 2016 Bad Debts Expense $3,900

Comfy Recliner Chairs completed the following selected transactions:

2016	
Jul. 1	Sold merchandise inventory to Great-Mart, receiving a $39,000, nine-month, 16% note. Ignore Cost of Goods Sold.
Oct. 31	Recorded credit and debit card sales for the period of $15,000. Use the gross method. Ignore Cost of Goods Sold.
Nov. 3	Card processor drafted company's checking account for processing fee of $420.
Dec. 31	Made an adjusting entry to accrue interest on the Great-Mart note
31	Made an adjusting entry to record bad debt expense based on an aging of accounts receivable. The aging schedule shows that $14,300 of accounts receivable will not be collected. Prior to this adjustment, the credit balance in Allowance for Bad Debts is $11,600.
2017	
Apr. 1	Collected the maturity value of the Great-Mart note.
Jun. 23	Sold merchandise inventory to Creative, Corp., receiving a 60-day, 9% note for $12,000. Ignore Cost of Goods Sold.
Aug. 22	Creative, Corp. dishonored its note at maturity; the business converted the maturity value of the note to an account receivable.
Nov. 16	Loaned $24,000 cash to Crosby, Inc., receiving a 90-day, 12% note.
Dec. 5	Collected in full on account from Creative, Corp.
31	Accrued the interest on the Crosby, Inc. note.

Record the transactions in the journal of Comfy Recliner Chairs. Explanations are not required. (For notes stated in days, use a 360-day year. Round to the nearest dollar.)

P8-38B Accounting for notes receivable and accruing interest

Learning Objective 4

1. Note 2 Maturity Value $20,300

Carley Realty loaned money and received the following notes during 2016.

Note	Date	Principal Amount	Interest Rate	Term
(1)	Oct. 1	$ 6,000	12%	1 year
(2)	Jun. 30	18,000	18%	9 months
(3)	Jun. 19	12,000	8%	180 days

Requirements

1. Determine the maturity date and maturity value of each note.
2. Journalize the entries to establish each Note Receivable. Include a single adjusting entry on December 31, 2016, the fiscal year-end, to record accrued interest revenue on any applicable note. Explanations are not required.
3. Journalize the collection of principal and interest at maturity on the three notes. Explanations are not required.

Learning Objective 4

March 6, 2017 Interest Revenue $325

P8-39B Accounting for notes receivable, dishonored notes, and accrued interest revenue

Consider the following transactions for Smith's Publishing.

2016	
Dec. 6	Received a $15,000, 90-day, 12% note in settlement of an overdue accounts receivable from Jazz Music.
31	Made an adjusting entry to accrue interest on the Jazz Music note.
31	Made a closing entry for interest revenue.
2017	
Mar. 6	Collected the maturity value of the Jazz Music note.
Jun. 30	Loaned $11,000 cash to RS Publishing, receiving a six-month, 12% note.
Oct. 2	Received a $3,000, 60-day, 12% note for a sale to Tusk Music. Ignore Cost of Goods Sold.
Dec. 1	Tusk Music dishonored its note at maturity.
1	Wrote off the receivable associated with Tusk Music. (Use the allowance method.)
30	Collected the maturity value of the RS Publishing note.

Journalize all transactions for Smith's Publishing. Round all amounts to the nearest dollar. (For notes stated in days, use a 360-day year.)

Learning Objective 5

1. Days' sales in receivables (2016) 16 days

P8-40B Using ratio data to evaluate a company's financial position

The comparative financial statements of Gold Cosmetic Supply for 2016, 2015, and 2014 include the data shown here:

	2016	2015	2014
Balance sheet—partial			
Current Assets:			
Cash	$ 90,000	$ 80,000	$ 60,000
Short-term investments	140,000	150,000	125,000
Accounts Receivable, Net	270,000	260,000	220,000
Merchandise Inventory	355,000	330,000	310,000
Prepaid Expenses	65,000	10,000	40,000
Total Current Assets	920,000	830,000	755,000
Total Current Liabilities	540,000	580,000	670,000
Income statement—partial			
Net Sales (all on account)	5,880,000	5,210,000	4,200,000

Requirements

1. Compute these ratios for 2016 and 2015:
   - **a.** Acid-test ratio (Round to two decimals.)
   - **b.** Accounts receivable turnover (Round to two decimals.)
   - **c.** Days' sales in receivables (Round to the nearest whole day.)
2. Considering each ratio individually, which ratios improved from 2015 to 2016 and which ratios deteriorated? Is the trend favorable or unfavorable for the company?

> Continuing Problem

P8-41 Accounting for uncollectible accounts using the allowance method

This problem continues the Daniels Consulting situation from Problem P7-33 of Chapter 7 and Problem P6-38 of Chapter 6. Daniels Consulting reviewed the receivables list from the January transactions. Daniels uses the allowance method for receivables, estimating uncollectibles to be 6% of January sales revenue of $8,180. Daniels identified on February 15 that a customer was not going to pay his receivable of $176.

Requirements

1. Journalize the January 31 entry to record and establish the allowance using the percent-of-sales method for January sales revenue.
2. Journalize the entry to record the write-off of the customer's bad debt.

> Practice Set

This problem continues the Crystal Clear Cleaning problem begun in Chapter 2 and continued through Chapters 3–7.

P8-42 Accounting for uncollectible accounts using the allowance method and reporting net accounts receivable on the balance sheet

Crystal Clear Cleaning uses the allowance method to estimate bad debts. Consider the following January transactions for Crystal Clear:

Jan. 1	Performed cleaning service for Debbie's D-list for $9,000 on account with terms 3/10, n/20.
10	Borrowed money from High Roller Bank, $20,000, making a 180 day, 15% note.
12	After discussions with Merry Cleaners, Crystal Clear has determined that $275 of the receivable owed will not be collected. Wrote off this portion of the receivable.
15	Sold goods to Westford for $8,000 on account with terms 5/10, n/30. Cost of Goods Sold was $400.
28	Sold goods to Meaghan, Inc. for cash of $2,000 (cost $350).
28	Collected from Merry Cleaners, $275 of receivable previously written off.
29	Paid cash for utilities of $450.
31	Created an aging schedule for Crystal Clear for accounts receivable. Crystal Clear determined that $8,100 of receivables were 5% uncollectible, $9,775 of receivables were 15% uncollectible, and $850 of receivables were 30% uncollectible. Crystal Clear determined the total amount of estimated uncollectible receivables and adjusted the Allowance for Bad Debts assuming a credit balance of $240 in the account. (Round to nearest whole dollar.)

Requirements

1. Prepare all required journal entries for Crystal Clear.
2. Show how net accounts receivable would be reported on the balance sheet as of January 31, 2018.

CRITICAL THINKING

> Decision Cases

Decision Case 8-1

Weddings on Demand sells on account and manages its own receivables. Average experience for the past three years has been as follows:

Sales	$ 350,000
Cost of Goods Sold	210,000
Bad Debts Expense	4,000
Other Expenses	61,000

Unhappy with the amount of bad debts expense she has been experiencing, Aledia Sanchez, controller, is considering a major change in the business. Her plan would be to stop selling on account altogether but accept either cash, credit cards, or debit cards from her customers. Her market research indicates that if she does so, her sales will increase by 10% (i.e., from $350,000 to $385,000), of which $200,000 will be credit or debit card sales and the rest will be cash sales. With a 10% increase in sales, there will also be a 10% increase in Cost of Goods Sold. If she adopts this plan, she will no longer have bad debts expense, but she will have to pay a fee on debit/credit card transactions of 2% of applicable sales. She also believes this plan will allow her to save $5,000 per year in other operating expenses.

Should Sanchez start accepting credit cards and debit cards? Show the computations of net income under her present arrangement and under the plan.

Decision Case 8-2

Pauline's Pottery has always used the direct write-off method to account for uncollectibles. The company's revenues, bad debt write-offs, and year-end receivables for the most recent year follow:

Year	Revenues	Write-offs	Receivables at Year-end
2016	$ 150,000	$ 3,900	$ 14,000

The business is applying for a bank loan, and the loan officer requires figures based on the allowance method of accounting for bad debts. In the past, bad debts have run about 4% of revenues.

Requirements

Pauline must give the banker the following information:

1. How much more or less would net income be for 2016 if Pauline's Pottery were to use the allowance method for bad debts? Assume Pauline uses the percent-of-sales method.
2. How much of the receivables balance at the end of 2016 does Pauline's Pottery actually expect to collect? (Disregard beginning account balances for the purpose of this question.)
3. Explain why net income is more or less using the allowance method versus the direct write-off method for uncollectibles.

> Fraud Case 8-1

Dylan worked for a propane gas distributor as an accounting clerk in a small Midwestern town. Last winter, his brother Mike lost his job at the machine plant. By January, temperatures were sub-zero, and Mike had run out of money. Dylan saw that Mike's account was overdue, and he knew Mike needed another delivery to heat his home. He decided to credit Mike's account and debit the balance to the parts inventory because he knew the parts manager, the owner's son, was incompetent and would never notice the extra entry. Months went by, and Dylan repeated the process until an auditor ran across the charges by chance. When the owner fired Dylan, he said, "If you had only come to me and told me about Mike's situation, we could have worked something out."

Requirements

1. What can a business like this do to prevent employee fraud of this kind?
2. What effect would Dylan's actions have on the balance sheet? The income statement?
3. How much discretion does a business have with regard to accommodating hardship situations?

> Financial Statement Case 8-1

Use **Starbucks Corporation**'s Fiscal 2013 Annual Report and the Note 1 data on "Allowance for Doubtful Accounts" to answer the following questions. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's annual report.

Requirements

1. How much accounts receivables did Starbucks report as of September 29, 2013? As of September 30, 2012?
2. Refer to Note 1, "Allowance for Doubtful Accounts." How does Starbucks calculate allowance for doubtful accounts? What was the amount of the account as of September 29, 2013? As of September 30, 2012?
3. Compute Starbucks's acid-test ratio at the end of 2013. If all the current liabilities came due immediately, could Starbucks pay them?
4. Compute Starbucks's accounts receivable turnover at the end of 2013. Use total net revenues.
5. Compute Starbucks's days' sales in receivables at the end of 2013.
6. How does Starbucks compare to **Green Mountain Coffee Roasters, Inc.** on the basis of the acid-test ratio, accounts receivable turnover, and days' sales in receivables?

> Quick Check Answers

1. d **2.** b **3.** d **4.** d **5.** a **6.** d **7.** b **8.** c **9.** a **10.** d

9

Plant Assets, Natural Resources, and Intangibles

What Do I Do with This Equipment?

Jerry Drake has been working hard at a new landscaping business for several months. Things are great—sales are increasing every month, and the customer base is increasing. So far, Jerry has been renting lawn equipment or borrowing equipment from his friends. Jerry is now considering buying several new lawn mowers, trimmers, and leaf blowers.

Jerry is trying to figure out how to record the purchase of these items on his books. Should he expense them all or set up asset accounts for each of the items? Jerry is also considering how long each item will last before he needs to purchase new equipment. He knows that his accountant will ask him about depreciation. She has told him there are several methods he should consider. Jerry knows he wants a depreciation method that will match the cost of the equipment with the revenue that the business earns.

In addition, Jerry plans on keeping the equipment as long as he can, which means that he will be making repairs and maintaining the equipment. He is wondering how the cost of the repairs should be recorded. And what happens when he finally sells the equipment? Jerry realizes there is a lot to consider when a business buys equipment. He knows that his accountant will help answer his many questions so he can properly record the cost of the equipment and any future associated costs.

How Are Plant Assets, Natural Resources, and Intangibles Accounted For?

Plant assets, natural resources, and intangibles are some of the most important assets on the balance sheet. These assets help create the revenue of the business. For example, TruGreen, a company that specializes in lawn and landscape services, wouldn't earn a profit without the lawn equipment it uses to service its customers' lawns. ConocoPhillips wouldn't have made a $9.1 billion profit in 2013 without its natural resource of oil reserves. And we are all familiar with McDonald's trademark "golden arches." In this chapter, we discuss how to record the purchase, cost allocation, and disposal of these assets.

Chapter 9 Learning Objectives

1 Measure the cost of a plant asset

2 Account for depreciation using the straight-line, units-of-production, and double-declining-balance methods

3 Journalize entries for the disposal of plant assets

4 Account for natural resources

5 Account for intangible assets

6 Use the asset turnover ratio to evaluate business performance

7 Journalize entries for the exchange of plant assets (Appendix 9A)

HOW DOES A BUSINESS MEASURE THE COST OF A PLANT ASSET?

Learning Objective 1
Measure the cost of a plant asset

Plant Asset
Long-lived, tangible asset, such as land, buildings, and equipment, used in the operation of a business.

Depreciation
The process by which businesses spread the allocation of a plant asset's cost over its useful life.

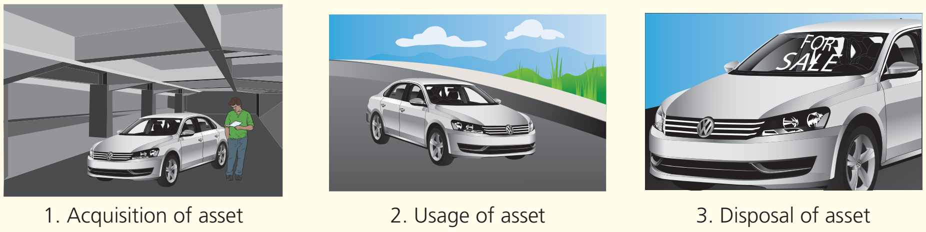
Plant assets are long-lived, tangible assets used in the operations of a business. Examples include land, buildings, equipment, furniture, and automobiles. Often, plant assets are referred to as *Property, Plant, and Equipment* or *Fixed Assets* in financial statements.

Plant assets are unique from other assets, such as office supplies, because plant assets are long term (lasting several years). This requires a business to allocate the cost of the asset over the years that the asset is expected to be used. This allocation of a plant asset's cost over its useful life is called **depreciation** and follows the matching principle. The matching principle ensures that all expenses are matched against the revenues of the period. Because plant assets are used over several years, a business will record a portion of the cost of the asset as an expense in each of those years. All plant assets except land are depreciated. We record no depreciation for land because it does not have a definitive or clearly estimable life, so it is difficult to allocate the cost of land.

Plant assets are used in the operations of the business. This means that they are not specifically acquired for resale, but instead they are used to help create the business's revenue. For example, a business that has a vacant building that is not currently being used would classify this asset as a long-term investment instead of as a plant asset. This is because the vacant building is sitting idle and not currently being used in the operations of the business.

Exhibit 9-1 summarizes the life cycle of a plant asset in a business. The business begins by acquiring the asset and recording the asset on its books. This involves determining the asset cost that is reported on the balance sheet. As the business uses the asset, it must record depreciation expense. In addition, the business also incurs additional expenses (such as repairs and maintenance) related to the asset. And lastly, when the asset has reached the end of its useful life, the business disposes of the asset. Each of these stages in the life of a plant asset must be recorded on the business's books.

Exhibit 9-1 | **Life Cycle of a Plant Asset**


1. Acquisition of asset
2. Usage of asset
3. Disposal of asset

Cost Principle
A principle that states that acquired assets and services should be recorded at their actual cost.

Plant assets are recorded at historical cost—the amount paid for the asset. This follows the **cost principle**, which states that acquired assets (and services) should be recorded at their actual cost. The *actual cost of a plant asset* is its purchase price plus taxes, purchase commissions, and all other amounts paid to ready the asset for its intended use. Let's begin by reviewing the different categories of plant assets.

Land and Land Improvements

The cost of land includes the following amounts paid by the purchaser:

- Purchase price
- Brokerage commission
- Survey and legal fees
- Deliquent property taxes
- Taxes assessed to transfer the ownership (title) on the land
- Cost of clearing the land and removing unwanted buildings

The cost of land does *not* include the following costs:

- Fencing
- Paving
- Sprinkler systems
- Lighting
- Signs

Land Improvement
A depreciable improvement to land, such as fencing, sprinklers, paving, signs, and lighting.

These separate plant assets (fencing, paving, and so on) are called **land improvements**. Unlike land, land improvements are subject to depreciation.

Suppose Smart Touch Learning needs property and purchases land on August 1, 2017, for $50,000 with a note payable for the same amount. The company also pays cash as follows: $4,000 in property taxes, $2,000 in transfer taxes, $5,000 to remove an old building, and a $1,000 survey fee. What is the company's cost of this land? Exhibit 9-2 shows all the costs incurred to bring the land to its intended use.

Exhibit 9-2 **Measuring the Cost of Land**

Purchase price of land		$ 50,000
Add related costs:		
Property taxes	$ 4,000	
Transfer taxes	2,000	
Removal of building	5,000	
Survey fee	1,000	12,000
Total cost of land		$ 62,000

The entry to record the purchase of the land on August 1, 2017, follows:

A↑	=	L↑	+	E
Land↑ Cash↓	=	Notes Payable↑		

Date	Accounts and Explanation	Debit	Credit
Aug. 1	Land	62,000	
	Notes Payable		50,000
	Cash		12,000
	To record purchase of land with cash and note payable.		

We would say that Smart Touch Learning *capitalized* the cost of the land at $62,000. **Capitalized** means that an asset account was debited (increased) because the company acquired an asset. So, for our land example, Smart Touch Learning debited the Land account for $62,000, the capitalized cost of the asset.

Capitalize
Recording the acquisition of land, building, or other assets by debiting (increasing) an asset account.

Suppose Smart Touch Learning then pays $20,000 for fences, paving, lighting, and signs on August 15, 2017. The following entry records the cost of these land improvements:

Date	Accounts and Explanation	Debit	Credit
Aug. 15	Land Improvements	20,000	
	Cash		20,000
	To record purchase of land improvements for cash.		

A↑↓		L	+	E
Land Improvements↑ Cash↓	=			

Land and land improvements are two entirely separate assets. Recall that land is not depreciated. However, the cost of land improvements *is* depreciated over that asset's useful life.

Buildings

The cost of a building depends on whether the company is constructing the building itself or is buying an existing one. These costs include the following:

Constructing a Building	Purchasing an Existing Building
• Architectural fees • Building permits • Contractor charges • Payments for materials, labor, and miscellaneous costs	• Purchase price • Costs to renovate the building to ready the building for use, which may include any of the charges listed under "Constructing a Building"

Machinery and Equipment

The cost of machinery and equipment includes the following:

- Purchase price (less any discounts)
- Transportation charges
- Insurance while in transit
- Sales tax and other taxes
- Purchase commission
- Installation costs
- Testing costs (prior to use of the asset)

After the asset is up and running, the company no longer capitalizes the cost of insurance, taxes, ordinary repairs, and maintenance to the Equipment account. From that point on, insurance, taxes, repairs, and maintenance costs are recorded as expenses.

Furniture and Fixtures

Furniture and fixtures include desks, chairs, file cabinets, display racks, shelving, and so forth. The cost of furniture and fixtures includes the basic cost of each asset (less any discounts), plus all other costs to ready the asset for its intended use. For example, for a desk, this may include the cost to ship the desk to the business and the cost paid to a laborer to assemble the desk.

Lump-Sum Purchase

A company may pay a single price for several assets as a group—a lump-sum purchase (sometimes called a *basket purchase*). For example, Smart Touch Learning may pay a single price for land and a building. For accounting purposes, the company must identify the cost of each asset purchased. The total cost paid (100%) is divided among the assets according to their relative market values. This is called the **relative-market-value method**.

Relative-Market-Value Method
A method of allocating the total cost (100%) of multiple assets purchased at one time. Total cost is divided among the assets according to their relative market values.

Suppose Smart Touch Learning paid a combined purchase price of $100,000 on August 1, 2017, for the land and building. An appraisal indicates that the land's market value is $30,000, and the building's market value is $90,000. It is clear that the company got a good deal, paying less than fair market value, which is $120,000 for the combined assets. But how will the accountant allocate the $100,000 paid for both assets?

First, calculate the ratio of each asset's market value to the total market value for both assets. The total appraised value is $120,000.

Total market value = Land market value + Building market value
= $30,000 + $90,000
= $120,000

The land makes up 25% of the total market value and the building 75%, as follows:

Percentage of total value = Land market value / Total market value
= $30,000 / $120,000
= 25%

Percentage of total value = Building market value / Total market value
= $90,000 / $120,000
= 75%

For Smart Touch Learning, the land is assigned the cost of $25,000 and the building is assigned the cost of $75,000. The calculations follow:

Asset	Market Value	Percentage of Total Value	× Total Purchase Price	= Assigned Cost of Each Asset
Land	$ 30,000	$30,000 / $120,000 = 25%	× $100,000	= $ 25,000
Building	90,000	$90,000 / $120,000 = 75%	× $100,000	= 75,000
Total	$ 120,000	100%		$ 100,000

Suppose the company purchased the assets by signing a note payable. The entry to record the purchase of the land and building is as follows:

A↑	=	L↑	+	E
Land↑ Building↑	=	Notes Payable↑		

Date	Accounts and Explanation	Debit	Credit
Aug. 1	Land	25,000	
	Building	75,000	
	Notes Payable		100,000
	To record purchase of land and building in exchange for note payable.		

Capital and Revenue Expenditures

Accountants divide spending on plant assets after the acquisition into two categories:

- Capital expenditures
- Revenue expenditures

A **capital expenditure** is debited to an asset account because it increases the asset's capacity or efficiency or extends the asset's useful life. A capital expenditure is also called a *balance sheet expenditure* because the cost of the expenditure is reported on the balance sheet as an asset.

Examples of capital expenditures include the purchase price plus all the other costs to bring an asset to its intended use, as discussed in the preceding sections. Also, an **extraordinary repair** is a capital expenditure because it extends the asset's capacity or useful life. An example of an extraordinary repair would be spending $3,000 to rebuild the engine on a five-year-old truck. This extraordinary repair would extend the asset's life past the normal expected life. As a result, its cost would be debited to the asset account for the truck as follows:

Capital Expenditure
An expenditure that increases the capacity or efficiency of a plant asset or extends its useful life. Capital expenditures are debited to an asset account.

Extraordinary Repair
Repair work that generates a capital expenditure because it extends the asset's life past the normal expected life.

Date	Accounts and Explanation	Debit	Credit
	Truck	3,000	
	Cash		3,000
	To record cost of rebuilding engine on truck.		

A↑↓		**L**	+	**E**
Truck↑ Cash↓	=			

Expenses incurred to maintain the asset in working order, such as repair or maintenance expense, are *not* debited to an asset account. Examples include the costs of maintaining equipment, such as repairing the air conditioner on a truck, changing the oil filter, and replacing its tires. These ordinary repairs are called **revenue expenditures** and are debited to Repairs and Maintenance Expense. Revenue expenditures, often called *income statement expenditures,* do not increase the capacity or efficiency of an asset or extend its useful life and are reported on the income statement as an expense in the period incurred.

Suppose that Smart Touch Learning paid $500 cash to replace tires on the truck. This expenditure does not extend the useful life of the truck or increase its efficiency. The company's accounting clerk records this transaction as a revenue expenditure as shown:

Revenue Expenditure
An expenditure that does not increase the capacity or efficiency of an asset or extend its useful life. Revenue expenditures are debited to an expense account.

Date	Accounts and Explanation	Debit	Credit
	Repairs and Maintenance Expense	500	
	Cash		500
	To record repairs and maintenance costs incurred.		

A↓		**L**	+	**E↓**
Cash↓	=			Repairs and Maintenance Expense↑

Exhibit 9-3 (on the next page) shows some (a) capital expenditures and (b) revenue expenditures for a delivery truck.

Exhibit 9-3 **Delivery Truck Expenditures—Capital Expenditure or Revenue Expenditure**

CAPITAL EXPENDITURE: **Debit an Asset Account**	**REVENUE EXPENDITURE:** **Debit Repairs and Maintenance Expense**
Extraordinary Repairs:	*Revenue Expenditures:*
Major engine or transmission overhaul	Repair of transmission or engine
Modification for new use	Oil change, lubrication, and so on
Addition to storage capacity	Replacement of tires or windshield
Anything that increases the life of the asset	Paint job

Treating a capital expenditure as an expense, or vice versa, creates an accounting error. Suppose a business replaces the engine in the truck. This would be an extraordinary repair because it increases the truck's life. If the company expenses the cost by debiting Repairs and Maintenance Expense rather than capitalizing it (debiting the asset), the company would be making an accounting error. This error has the following effects:

- Overstates Repairs and Maintenance Expense
- Understates net income
- Understates stockholders' equity
- Understates the Truck account (asset) on the balance sheet

Incorrectly capitalizing an expense creates the opposite error. Assume a minor repair, such as replacing the water pump on the truck, was incorrectly debited to the asset account. The error would result in expenses being understated and net income being overstated. Additionally, the cost of the truck would be overstated on the balance sheet by the amount of the repair bill.

Try It!

1. Budget Banners pays $200,000 cash for a group purchase of land, building, and equipment. At the time of acquisition, the land has a market value of $22,000, the building $187,000, and the equipment $11,000. Journalize the lump-sum purchase.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S9-1 and S9-2. MyAccountingLab

WHAT IS DEPRECIATION, AND HOW IS IT COMPUTED?

Learning Objective 2
Account for depreciation using the straight-line, units-of-production, and double-declining-balance methods

Obsolete
An asset is considered obsolete when a newer asset can perform the job more efficiently than the old.

As we learned earlier, depreciation is the allocation of a plant asset's cost to expense over its useful life. Depreciation matches the expense against the revenue generated from using the asset to measure net income.

All assets, except land, wear out as they are used. For example, a business's delivery truck can only go so many miles before it is worn out. As the truck is driven, this use is part of what causes depreciation. Additionally, physical factors, like age and weather, can cause depreciation of assets.

Some assets, such as computers and software, may become *obsolete* before they wear out. An asset is **obsolete** when a newer asset can perform the job more efficiently. As a result, an asset's useful life may be shorter than its physical life. In all cases, the asset's cost is depreciated over its useful life.

Now that we have discussed causes of depreciation, let's discuss what depreciation is *not*.

1. *Depreciation is not a process of valuation.* Businesses do not record depreciation based on changes in the asset's market value.
2. *Depreciation does not mean that the business sets aside cash to replace an asset when it is used up.* Depreciation has nothing to do with cash.

Factors in Computing Depreciation

Depreciation of a plant asset is based on three main factors:

1. Capitalized cost
2. Estimated useful life
3. Estimated residual value

Capitalized cost is a known cost and, as mentioned earlier in this chapter, includes all items paid for the asset to perform its intended function. The other two factors are estimates.

Estimated **useful life** is how long the company expects it will use the asset. Useful life may be expressed in time, such as months or years, or usage, such as units produced, hours used (for machinery), or miles driven (for a truck). A company's useful life estimate might be shorter than the actual life of the asset. For example, a business might estimate a useful life of five years for a delivery truck because it has a policy that after five years the truck will be traded in for a new vehicle. The business knows that the truck will last longer than five years, but the business uses a useful life of only five years because this is how long the company expects to use the asset.

Useful Life
Length of the service period expected from an asset. May be expressed in time, such as months or years, or usage, such as units produced, hours used (for machinery), or miles driven (for a truck).

Useful life is an estimate based on a company's experience and judgment. The goal is to define estimated useful life with the measure (years, units, and so on) that best matches the asset's decline or use. When determining useful life, a company considers how long it will use the asset and when the asset will become obsolete.

Estimated **residual value**—also called *salvage value*—is the asset's expected value at the end of its useful life. When a company decides to dispose of an asset, the company will sell or scrap it. The residual value is the amount the company expects to receive when the company disposes of the asset. Residual value can sometimes be zero if a company does not expect to receive anything when disposing of the asset. If a company plans on trading the asset in for a new asset, the residual value will be the expected trade-in value. Estimated residual value is *not* depreciated because the company expects to receive this amount at the end. Cost minus estimated residual value is called **depreciable cost**.

Residual Value
The expected value of a depreciable asset at the end of its useful life.

Depreciable Cost
The cost of a plant asset minus its estimated residual value.

Depreciable cost = Cost − Estimated residual value

Depreciation Methods

There are many depreciation methods for plant assets, but three are used most commonly:

- Straight-line method
- Units-of-production method
- Double-declining-balance method

These methods work differently in *how* they derive the yearly depreciation amount, but they all result in the same total depreciation over the total life of the asset. Exhibit 9-4 (on the next page) gives the data we will use for a truck that Smart Touch Learning purchases and places in service on January 1, 2017.

Exhibit 9-4 | **Data for Truck**

Data Item	Amount
Cost of truck	$ 41,000
Less: Estimated residual value	1,000
Depreciable cost	$ 40,000
Estimated useful life—Years	5 years
Estimated useful life—Units	100,000 miles

Straight-Line Method

The **straight-line method** allocates an equal amount of depreciation to each year and is calculated as follows:

Straight-Line Method
A depreciation method that allocates an equal amount of depreciation each year. (Cost – Residual value) / Useful life.

Straight-line depreciation = (Cost − Residual value) / Useful life
= ($41,000 − $1,000) / 5 years
= $8,000 per year

Because the asset was placed in service on the first day of the year, the adjusting entry to record each year's depreciation is as follows:

A↓		L	+	E↓
Accumulated Depreciation—Truck↑	=			Depreciation Expense—Truck↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Depreciation Expense—Truck	8,000	
	Accumulated Depreciation—Truck		8,000
	To record depreciation on truck.		

Depreciation Expense is reported on the income statement. Accumulated Depreciation is a contra asset that is reported on the balance sheet following the Truck account. The **book value** of the plant asset, cost minus accumulated depreciation, is reported on the balance sheet at December 31, 2017, as follows:

Book Value
A depreciable asset's cost minus accumulated depreciation.

Plant Assets:	
Truck	$ 41,000
Less: Accumulated Depreciation—Truck	(8,000)
Truck, Net	$ 33,000

A straight-line depreciation schedule for this truck is shown in Exhibit 9-5. The final column on the right shows the asset's book value, which is cost less accumulated depreciation. Notice that the depreciation expense amount is the same every year and that the accumulated depreciation is the sum of all depreciation expense recorded to date for the depreciable asset.

Exhibit 9-5 **Straight-Line Depreciation Schedule**

		Depreciation for the Year					
Date	Asset Cost	Depreciable Cost	Useful Life		Depreciation Expense	Accumulated Depreciation	Book Value
1-1-2017	$ 41,000						$ 41,000
12-31-2017		($41,000 – $1,000)	/ 5 years	=	$ 8,000	$ 8,000	33,000
12-31-2018		($41,000 – $1,000)	/ 5 years	=	8,000	16,000	25,000
12-31-2019		($41,000 – $1,000)	/ 5 years	=	8,000	24,000	17,000
12-31-2020		($41,000 – $1,000)	/ 5 years	=	8,000	32,000	9,000
12-31-2021		($41,000 – $1,000)	/ 5 years	=	8,000	40,000	1,000

Residual value

As an asset is used, accumulated depreciation increases and book value decreases. (See the Accumulated Depreciation and Book Value columns in Exhibit 9-5.) At the end of its estimated useful life, the asset is said to be fully depreciated. An asset's final book value is its residual value ($1,000 in this example).

ETHICS

Capitalize or expense?

Furniture.com uses automated shipping equipment. Early in the year, Furniture.com purchased equipment at a cost of $400,000. Management expects the equipment to remain in service for five years, with zero residual value. Furniture.com plans on using straight-line depreciation. Mason Green is finalizing the depreciation expense calculation for the year when Furniture.com's controller, Flynn Steel, tells Mason to expense the entire cost of the equipment instead of capitalizing the equipment at the time of purchase. Flynn argues that the company won't have to worry about recording depreciation for the next five years—the accounting will "just be easier." What should Mason do? What would you do?

Solution

Mason should explain to Flynn that the cost of an asset that will provide future benefit to the company should be capitalized and then depreciated over the life of the asset. In expensing the entire cost of the equipment in the year of purchase, depreciation expense of $80,000 [($400,000 − $0) / 5 years] that should have been recorded would not have been. This error would make net income understated by $320,000 ($400,000 − $80,000), and the company would not be following GAAP. If the controller still disagrees, Mason should discuss the situation with the company's president.

Units-of-Production Method

The **units-of-production method** allocates a varying amount of depreciation each year based on an asset's usage. Units-of-production depreciates by units rather than by years. As we noted earlier, a unit of output can be miles, units, hours, or output, depending on which unit type best defines the asset's use. When a plant asset's usage varies every year, the units-of-production method does a better of job of matching expenses with revenues.

Units-of-Production Method
A depreciation method that allocates a varying amount of depreciation each year based on an asset's usage.

The truck in our example is estimated to be driven 20,000 miles the first year, 30,000 the second, 25,000 the third, 15,000 the fourth, and 10,000 during the fifth (for a total useful life of 100,000 miles). The units-of-production depreciation for each period varies with the number of units (miles, in the case of the truck) the asset produces. Units-of-production depreciation is calculated as follows:

Step 1:

Depreciation per unit = (Cost − Residual value) / Useful life in units
= ($41,000 − $1,000) / 100,000 miles
= $0.40 per mile

Step 2:

Units-of-production depreciation = Depreciation per unit × Current year usage
= $0.40 per mile × 20,000 miles
= $8,000 (year 1)

Units-of-production depreciation for the truck is illustrated in Exhibit 9-6.

Exhibit 9-6 | **Units-of-Production Depreciation Schedule**

		Depreciation for the Year							
Date	**Asset Cost**	**Depreciation Per Unit**		**Number of Units**		**Depreciation Expense**	**Accumulated Depreciation**	**Book Value**	
1-1-2017	$ 41,000							$ 41,000	
12-31-2017		$ 0.40	×	20,000	=	$ 8,000	$ 8,000	33,000	
12-31-2018		0.40	×	30,000	=	12,000	20,000	21,000	
12-31-2019		0.40	×	25,000	=	10,000	30,000	11,000	
12-31-2020		0.40	×	15,000	=	6,000	36,000	5,000	
12-31-2021		0.40	×	10,000	=	4,000	40,000	1,000	← Residual value

Double-Declining-Balance Method

An **accelerated depreciation method** expenses more of the asset's cost near the start of an asset's life and less at the end of its useful life. The main accelerated method of depreciation is the **double-declining-balance method**. The double-declining-balance method multiplies an asset's decreasing book value (the asset's cost less its accumulated depreciation) by a constant percentage that is twice the straight-line depreciation rate. The straight-line depreciation rate is calculated as *1 / useful life*. Therefore, the double-declining-balance method rate will be *2 × (1 / useful life)*. Double-declining-balance amounts can be computed using the following formula:

Accelerated Depreciation Method
A depreciation method that expenses more of the asset's cost near the start of its useful life and less at the end of its useful life.

Double-Declining-Balance Method
An accelerated depreciation method that computes annual depreciation by multiplying the depreciable asset's decreasing book value by a constant percent that is two times the straight-line depreciation rate.

Double-declining-balance depreciation = (Cost − Accumulated depreciation) × 2 × (1 / Useful life)

For the first year of the truck, the calculation would be as shown:

Double-declining-balance depreciation = (Cost − Accumulated depreciation) × 2 × (1 / Useful life)
= ($41,000 − $0) × 2 × (1 / 5 years)
= $16,400 (year 1)

In year 2, the amount of depreciation would decline because the asset has accumulated some depreciation (the $16,400 for the first year). For the second year of the truck, therefore, the calculation would be as shown:

$$\begin{aligned}\text{Double-declining-balance depreciation} &= (\text{Cost} - \text{Accumulated depreciation}) \times 2 \times (1\ /\ \text{Useful life})\\ &= (\$41{,}000 - \$16{,}400) \times 2 \times (1\ /\ 5\ \text{years})\\ &= \$9{,}840\ (\text{year 2})\end{aligned}$$

Note that residual value is not included in the formula. Residual value is ignored until the depreciation expense takes the book value below the residual value. When this occurs, the final year depreciation is calculated as the amount needed to bring the asset to its residual value. In the case of the truck, residual value was given at $1,000. In the double-declining-balance schedule in Exhibit 9-7, notice that, after year 4 (12-31-2020), the truck's book value is $5,314. By definition, the truck is to last five years, which ends on 12-31-2021. At the end of the asset's life, its book value should equal the residual value. Therefore, in the final year, depreciation is book value, $5,314, less the $1,000 residual value, or $4,314 in depreciation expense.

Exhibit 9-7 **Double-Declining-Balance Depreciation Schedule**

		Depreciation for the Year							
Date	**Asset Cost**	**Book Value**		**DDB Rate**		**Depreciation Expense**	**Accumulated Depreciation**	**Book Value**	
1-1-2017	$ 41,000							$ 41,000	
12-31-2017		$41,000	×	$2 \times \frac{1}{5}$	=	$ 16,400	$ 16,400	24,600	
12-31-2018		24,600	×	$2 \times \frac{1}{5}$	=	9,840	26,240	14,760	
12-31-2019		14,760	×	$2 \times \frac{1}{5}$	=	5,904	32,144	8,856	
12-31-2020		8,856	×	$2 \times \frac{1}{5}$	=	3,542	35,686	5,314	
12-31-2021						4,314*	40,000	$\boxed{1{,}000}$	← Residual value

*Last year depreciation is the "plug figure" needed to reduce book value to the residual amount ($5,314 – $1,000 = $4,314).

Comparing Depreciation Methods

Let's compare the depreciation methods. Annual depreciation expense amounts vary, but total accumulated depreciation is $40,000 for all three methods.

AMOUNT OF DEPRECIATION PER YEAR

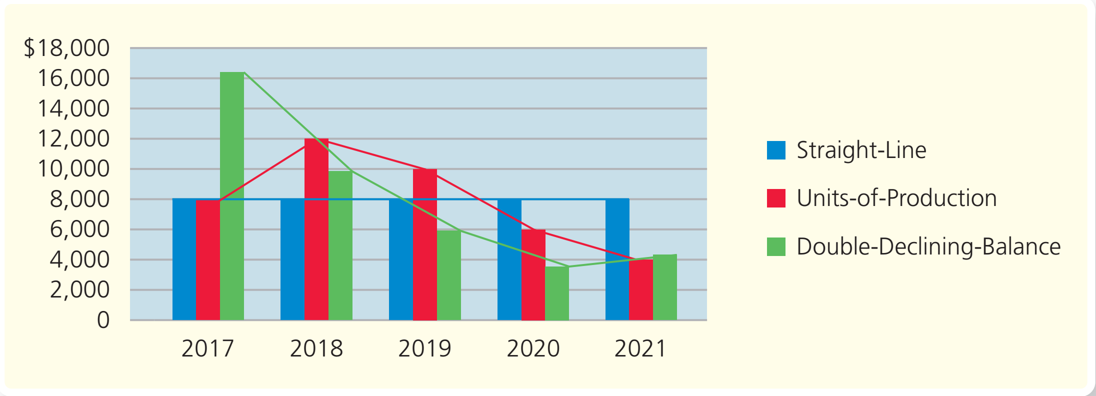
			Accelerated Method
Year	**Straight-Line**	**Units-of-Production**	**Double-Declining-Balance**
1	$ 8,000	$ 8,000	$ 16,400
2	8,000	12,000	9,840
3	8,000	10,000	5,904
4	8,000	6,000	3,542
5	8,000	4,000	4,314
Total Accumulated Depreciation	$ 40,000	$ 40,000	$ 40,000

Deciding which method is best depends on the asset. A business should match an asset's expense against the revenue that the asset produces. The following are some guidelines for which method to use:

Method	Asset Characteristics	Effect on Depreciation	Example Assets
Straight-Line	Generates revenue evenly over time	Equal amount each period	Building
Units-of-Production	Depreciates due to wear and tear rather than obsolescence	More usage causes larger depreciation	Vehicles (miles) Machinery (machine hours)
Double-Declining-Balance	Produces more revenue in early years	Higher depreciation in early years, less later	Computers

Exhibit 9-8 shows the three methods in one graph for additional comparison. Notice that the straight-line method produces a straight line on the graph because there is an equal amount of depreciation expense each year. The double-declining-balance method produces a line that is decreasing, and the units-of-production method's line varies based on usage.

Exhibit 9-8 **Annual Depreciation by Method**



DECISIONS

Which depreciation method should be selected?

Three Junes Weaving has just purchased an automated weaving machine and is trying to figure out which depreciation method to use: straight-line, units-of-production, or double-declining-balance. Ira Glasier, the controller, is interested in using a depreciation method that approximates the usage of the weaving machine. He also expects that the weaving machine will have increasing repairs and maintenance as the asset ages. Which method should Ira choose?

Solution

If Ira is interested in using a depreciation method that approximates the usage of the weaving machine, he should use the units-of-production method to depreciate the asset. He could use number of machine hours as the unit of output. This method would best match the usage of the machine to the amount of expense recorded. Ira should be aware, though, that this method could produce varying amounts of depreciation expense each year. For example, if Three Junes Weaving does not use the weaving machine in one year, no depreciation expense would be recorded. This could cause net income to vary significantly from year to year. Because Ira expects the weaving machine to need more repairs as the asset ages, Ira might consider using the double-declining-balance method instead. The double-declining-balance method records a higher amount of depreciation in the early years and less later. This method works well for assets that are expected to have increasing repairs and maintenance in their later years because the total expense (depreciation and repairs and maintenance) can be spread out equally over the life of the asset.

Depreciation for Tax Purposes

The Internal Revenue Service (IRS) requires that companies use a specific depreciation method for tax purposes. This method is the **Modified Accelerated Cost Recovery System (MACRS)**.

Modified Accelerated Cost Recovery System (MACRS)
A depreciation method that is used for tax purposes.

Under MACRS, assets are divided into specific classes, such as 3-year, 5-year, 7-year, and 39-year property. Businesses do not get to choose the useful life of the asset. Instead, the IRS specifies the useful life based on the specific classes. For example, office furniture has a 7-year life for tax purposes but might only be depreciated for five years for book purposes.

In addition, the MACRS method ignores residual value. For tax purposes, an asset is fully depreciated to a book value of zero. **MACRS is not acceptable for financial reporting under GAAP.** This requires that businesses record depreciation for plant assets under two methods—book method (straight-line, units-of-production, or double-declining-balance) and tax method (MACRS).

Can the MACRS method be used for financial reporting in accordance with GAAP?

Partial-Year Depreciation

In the previous examples, we calculated depreciation for the entire year. What would happen if the business placed the truck in service on July 1, 2017, instead of January 1, 2017? Would the depreciation for any of the methods change? Yes, but only the methods that are calculated based on a time period, which means only straight-line and double-declining-balance would change. Units-of-production does not consider years in its formula; thus, that calculation remains the same.

When a business purchases an asset during the year (other than January 1), the business should record depreciation for only the portion of the year that the asset was used in the operations of the business. This partial-year depreciation could be calculated to the nearest day, but this is unnecessary. In this book, we will assume a method called modified half-month convention, which means if an asset is purchased on or before the 15th of the month, the asset will be depreciated for the whole month. If the asset is purchased after the 15th of the month, the asset will not be depreciated until the following month.

Returning to our example, assume that the truck was placed into service on July 1, 2017. The revised straight-line calculation under the altered in-service date is as follows:

Straight-line depreciation = [(Cost − Residual Value) / Useful Life] × (Number of Months / 12 months)
= [($41,000 − $1,000) / 5 years] × (6 / 12)
= $4,000

Because the business used the asset for six months of the year, we only record 6/12 (6 out of 12 months) of straight-line depreciation expense, or $4,000, in 2017.

Partial-year depreciation also applies to disposals of assets (which we will cover later in this chapter). If an asset is disposed of during the year, the business must calculate depreciation for only the time period before the asset was disposed, not the entire year.

Changing Estimates of a Depreciable Asset

Estimating the useful life and residual value of a plant asset poses a challenge. As the asset is used, the business may change its estimated useful life or estimated residual value. If this happens, the business must recalculate depreciation expense. For example, the business may find that its truck lasts eight years instead of five. This is a change in estimated useful life. Accounting changes like this are common because useful life and residual value are estimates and, as a result, are not based on perfect foresight. When a company makes an accounting change, Generally Accepted Accounting Principles require the business to recalculate the depreciation for the asset in the year of change and in future periods. They do not require that businesses restate prior years' financial statements for this change in estimate.

For a change in either estimated asset life or residual value, the asset's remaining depreciable book value is spread over the asset's remaining life. Suppose Smart Touch Learning used the truck purchased on January 1, 2017, for two full years. Under the straight-line method, accumulated depreciation would be $16,000. (Refer to Exhibit 9-5.)

Straight-line depreciation = (Cost − Residual Value) / Useful Life
= ($41,000 − $1,000) / 5 years
= $8,000 per year × 2 years
= $16,000

Remaining depreciable book value (cost *less* accumulated depreciation) is $25,000 ($41,000 − $16,000). Suppose Smart Touch Learning believes the truck will remain useful for six more years (for a total of eight years). Residual value is unchanged. At the start of 2019, the company would recompute depreciation as follows:

Revised depreciation = (Book value − Revised residual value) / Revised useful life remaining
= ($25,000 − $1,000) / 6 years
= $4,000 per year

Make sure to use the useful life remaining as the denominator in the formula.

In years 2019–2024, the yearly depreciation entry based on the new useful life would be as follows:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Depreciation Expense—Truck	4,000	
	Accumulated Depreciation—Truck		4,000
	To record depreciation on truck.		

A↓	=	L	+	E↓
Accumulated Depreciation—Truck↑				Depreciation Expense—Truck↑

Reporting Plant Assets

Plant assets are reported at book value on the balance sheet. Companies may choose to report plant assets as a single amount, with a note to the financial statements that provides detailed information, or companies may provide detailed information on the face of the statement. The cost of the asset and the related accumulated depreciation should be disclosed. Exhibit 9-9 shows the two alternative reporting treatments for plant assets.

IFRS permits the presentation of plant assets at their fair market value because market value may be more relevant and thus more useful to readers of financial statements.

Exhibit 9-9 | **Reporting Plant Assets**

Treatment 1: Plant Assets on the Balance Sheet of Smart Touch Learning (December 31)		
Plant Assets:		
Furniture	$ 18,000	
Less: Accumulated Depreciation—Furniture	(300)	$ 17,700
Building	60,000	
Less: Accumulated Depreciation—Building	(250)	59,750
Land		20,000
Plant Assets, Net		$ 97,450

Treatment 2: Plant Assets on the Balance Sheet of Smart Touch Learning (December 31)	
Plant Assets, Net (See Note 8)	$ 97,450

Try It!

2. On January 1, Alamo Cranes purchased a crane for $140,000. Alamo expects the crane to remain useful for six years (1,000,000 lifts) and to have a residual value of $2,000. The company expects the crane to be used for 80,000 lifts the first year.

Compute the first-year depreciation expense on the crane using the following methods:

a. Straight-line
b. Units-of-production (Round *depreciation per unit* to two decimals. Round depreciation expense to the nearest whole dollar.)
c. Double-declining-balance (Round depreciation expense to the nearest whole dollar.)

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S9-3 through S9-6. MyAccountingLab

HOW ARE DISPOSALS OF PLANT ASSETS RECORDED?

Learning Objective 3

Journalize entries for the disposal of plant assets

Eventually, an asset wears out or becomes obsolete. The business then has several options:

- Discard the plant asset.
- Sell the plant asset.
- Exchange the plant asset for another plant asset.

In this section, we discuss the first two options. Exchanging a plant asset for another asset is covered in the appendix to this chapter (Appendix 9A).

Plant assets remain on the business's books until they are disposed of. For example, a fully depreciated asset, one that has reached the end of its estimated useful life and is still in service, will still be reported as an asset on the balance sheet. If the asset is still useful, the company may continue using it even though no additional depreciation is recorded. If the asset is no longer useful, it is disposed of. This requires the business to remove the asset and associated accumulated depreciation from the books. In addition, a gain or loss might be recognized by the company.

Regardless of the type of disposal, there are four steps:

1. Bring the depreciation up to date.
2. Remove the old, disposed-of asset and associated accumulated depreciation from the books.
3. Record the value of any cash received (or paid) in the disposal of the asset.
4. Finally, determine the amount of any gain or loss. Gain or loss is determined by comparing the cash received and the market value of any other assets received with the book value of the asset disposed of.

Discarding Plant Assets

Discarding of plant assets involves disposing of the asset for no cash. If an asset is disposed of when it is fully depreciated and has no residual value, then the business simply removes the asset and contra asset, Accumulated Depreciation, from the books (Step 2). There is no need to bring the depreciation up to date (Step 1) because the asset is already fully depreciated. In addition, no cash was received or paid and no gain or loss is recognized (Steps 3 and 4).

For example, assume that on July 1, Smart Touch Learning discards equipment with a cost of $10,000 and accumulated depreciation of $10,000. The asset and contra asset accounts are shown below before disposal.

Equipment	
10,000	

Accumulated Depreciation—Equipment	
	10,000

To dispose of the equipment, Smart Touch Learning will need to credit the asset account, Equipment, and debit Accumulated Depreciation—Equipment. The accounting clerk will record the transaction as follows:

A↑↓		L + E
Equipment↓ Accumulated Depreciation—Equipment↓	=	

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Accumulated Depreciation—Equipment	10,000	
	Equipment		10,000
	Discarded fully depreciated equipment.		

Equipment

	10,000	10,000	July 1
Bal.	0		

Accumulated Depreciation—Equipment

July 1	10,000	10,000	
		0	Bal.

After disposal, notice that the Equipment and Accumulated Depreciation—Equipment accounts now have a zero balance. These accounts will no longer be reported on the financial statements because Smart Touch Learning no longer owns the equipment.

Suppose, instead, that on July 1, Smart Touch Learning discarded the equipment, which has a cost of $10,000 but it is not fully depreciated. As of December 31 of the previous year, accumulated depreciation was $8,000. Annual depreciation expense is $1,000 per year. The first step in recording the disposal is to bring the asset up to date on depreciation. Because Smart Touch Learning disposes of the asset on July 1, one-half of a year's depreciation will be recorded ($1,000 × 1/2 = $500) as follows:

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Depreciation Expense—Equipment	500	
	Accumulated Depreciation—Equipment		500
	To record depreciation on equipment.		

A↓	=	L	+	E↓
Accumulated Depreciation—Equipment↑				Depreciation Expense—Equipment↑

Steps 2 through 4 involve recording the disposal of the equipment and accumulated depreciation and calculating any gain or loss. In this situation, there is a $1,500 loss calculated as follows:

Market value of assets received		$ 0
Less: Book value of asset disposed of:		
Cost	$ 10,000	
Less: Accumulated Depreciation ($8,000 + $500)	(8,500)	1,500
Gain or (Loss)		$ (1,500)

When calculating gain or loss, don't forget to update the Accumulated Depreciation account. In this example, before recording depreciation, the Accumulated Depreciation account was $8,000; $500 of additional depreciation was recorded at disposal, bringing the total accumulated depreciation to $8,500.

The account, Loss on Disposal, will be used. This account has a normal debit balance and is reported in the Other Revenues and (Expenses) section of the income statement which includes gains and losses on the sale of plant assets.

Smart Touch Learning records the following entry to dispose of the equipment:

A↓	=	L	+	E↓
Equipment↓ Accumulated Depreciation—Equipment↓				Loss on Disposal↑

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Accumulated Depreciation—Equipment	8,500	
	Loss on Disposal	1,500	
	Equipment		10,000
	Discarded equipment with a book value of $1,500.		

Equipment

	10,000	10,000	July 1
Bal.	0		

Accumulated Depreciation—Equipment

		8,000	
July 1	8,500	500	July 1
		0	Bal.

Loss on Disposal

July 1	1,500		

Selling Plant Assets

Companies will often sell a plant asset for cash. We will again use Smart Touch Learning as an example. On July 1, the company sells equipment with a historical cost of $10,000 and accumulated depreciation, as of December 31 of the previous year, of $8,000. Annual depreciation is $1,000. The first step is to bring the depreciation up to date for the six months through the date of disposal.

A↓	=	L	+	E↓
Accumulated Depreciation—Equipment↑				Depreciation Expense—Equipment↑

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Depreciation Expense—Equipment	500	
	Accumulated Depreciation—Equipment		500
	To record depreciation on equipment.		

This entry brings the accumulated depreciation to $8,500 ($8,000 + $500). The equipment now has a book value of $1,500 ($10,000 − $8,500). Now that we have recorded Step 1, let's look at Steps 2 through 4 for several different scenarios.

Selling a Plant Asset at Book Value

Suppose that Smart Touch Learning sells the equipment for $1,500. Notice that the cash received is equal to the book value of the asset. When a business sells an asset for book value, no gain or loss is recorded. This is because the cash received is equal to the book value of the asset sold.

Market value of assets received		$ 1,500
Less: Book value of asset disposed of:		
Cost	$ 10,000	
Less: Accumulated Depreciation	(8,500)	1,500
Gain or (Loss)		$ 0

In recording the journal entry, Smart Touch Learning will debit cash for $1,500 and then take the equipment and accumulated depreciation off the books as follows:

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Cash	1,500	
	Accumulated Depreciation—Equipment	8,500	
	Equipment		10,000
	Sold equipment for cash.		

A↑↓		L	+	E
Cash↑ Equipment↓ Accumulated Depreciation—Equipment↓	=			

Cash

July 1	1,500		

Equipment

	10,000	10,000	July 1
Bal.	0		

Accumulated Depreciation—Equipment

		8,000	
July 1	8,500	500	July 1
		0	Bal.

Selling a Plant Asset Above Book Value

If Smart Touch Learning sells the equipment for $4,000, the company will record a gain on sale of the equipment. Notice that the cash received is more than the book value of the asset. When a business sells an asset for more than its book value, a gain is recorded.

Market value of assets received		$ 4,000
Less: Book value of asset disposed of:		
Cost	$ 10,000	
Less: Accumulated Depreciation	(8,500)	1,500
Gain or (Loss)		$ 2,500

The account, Gain on Disposal, will be used. This account has a normal credit balance and is reported in the Other Revenues and (Expenses) section of the income statement.

In recording the journal entry, Smart Touch Learning will remove the old equipment and accumulated depreciation from the books (Step 2), record a debit to Cash for $4,000 (Step 3), and then record a credit to Gain on Disposal (Step 4) as follows:

A↑		L	+	E↑
Cash↑ Equipment↓ Accumulated Depreciation—Equipment↓	=			Gain on Disposal↑

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Cash	4,000	
	Accumulated Depreciation—Equipment	8,500	
	Equipment		10,000
	Gain on Disposal		2,500
	Sold equipment for cash.		

After you have recorded the transaction for disposal of plant assets, it's always a good idea to check that debits equal credits in the journal entry.

Cash

July 1	4,000		

Equipment

	10,000	10,000	July 1
Bal.	0		

Accumulated Depreciation—Equipment

		8,000	
July 1	8,500	500	July 1
		0	Bal.

Gain on Disposal

		2,500	July 1

Selling a Plant Asset Below Book Value

If Smart Touch Learning sells the equipment for $500, the company will record a loss on the sale of the equipment. Notice that the cash received is less than the book value of the asset. When a business sells an asset for less than its book value, a loss is recorded.

Market value of assets received		$ 500
Less: Book value of asset disposed of:		
Cost	$ 10,000	
Less: Accumulated Depreciation	(8,500)	1,500
Gain or (Loss)		($ 1,000)

In recording the journal entry, Smart Touch Learning will remove the old equipment and accumulated depreciation from the books (Step 2), record a debit to Cash for $500 (Step 3), and then record a debit to Loss on Disposal (Step 4) as follows:

A↓		L	+	E↓
Cash↑ Equipment↓ Accumulated Depreciation—Equipment↓	=			Loss on Disposal↑

Date	Accounts and Explanation	Debit	Credit
Jul. 1	Cash	500	
	Accumulated Depreciation—Equipment	8,500	
	Loss on Disposal	1,000	
	Equipment		10,000
	Sold equipment for cash.		

Cash

July 1	500		

Equipment

	10,000	10,000	July 1
Bal.	0		

Accumulated Depreciation—Equipment

		8,000	
July 1	8,500	500	July 1
		0	Bal.

Loss on Disposal

July 1	1,000		

In this section, we have reviewed the journal entries for discarding and selling of plant assets. Exhibit 9-10 summarizes what you have learned. Before moving on, take a moment to review the exhibit.

Exhibit 9-10 **Disposals of Plant Assets**

Discarding of fully depreciated plant asset:

Date	Accounts and Explanation	Debit	Credit
	Accumulated Depreciation	10,000	
	Plant Asset		10,000

Discarding of a plant asset that is not fully depreciated:

Date	Accounts and Explanation	Debit	Credit
	Accumulated Depreciation	8,500	
	Loss on Disposal	1,500	
	Plant Asset		10,000

Selling a plant asset at book value:

Date	Accounts and Explanation	Debit	Credit
	Cash	1,500	
	Accumulated Depreciation	8,500	
	Plant Asset		10,000

Selling a plant asset above book value:

Date	Accounts and Explanation	Debit	Credit
	Cash	4,000	
	Accumulated Depreciation	8,500	
	Plant Asset		10,000
	Gain on Disposal		2,500

Selling a plant asset below book value:

Date	Accounts and Explanation	Debit	Credit
	Cash	500	
	Accumulated Depreciation	8,500	
	Loss on Disposal	1,000	
	Plant Asset		10,000

Try It!

3. Counselors of Atlanta purchased equipment on January 1, 2015, for $20,000. Counselors of Atlanta expected the equipment to last for four years and have a residual value of $2,000. Suppose Counselors of Atlanta sold the equipment for $8,000 on December 31, 2017, after using the equipment for three full years. Assume depreciation for 2017 has been recorded. Journalize the sale of the equipment, assuming straight-line depreciation was used.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S9-7 through S9-10. MyAccountingLab

HOW ARE NATURAL RESOURCES ACCOUNTED FOR?

Learning Objective 4
Account for natural resources

Natural Resource
An asset that comes from the earth and is consumed.

Depletion
The process by which businesses spread the allocation of a natural resource's cost over its usage.

Natural resources are assets that come from the earth that are consumed. Examples include iron ore, oil, natural gas, diamonds, gold, coal, and timber. Natural resources are expensed through *depletion*. **Depletion** is the process by which businesses spread the allocation of a natural resource's cost to expense over its usage. It's called depletion because the company is depleting (using up) a natural resource such that at some point in time, there is nothing left to extract. Depletion expense is computed by the units-of-production method.

For example, an oil well cost $700,000 and is estimated to hold 70,000 barrels of oil. There is no residual value. If 3,000 barrels are extracted and sold during the year, then depletion expense is calculated as follows:

Step 1:

Depletion per unit = (Cost − Residual value) / Estimated total units
= ($700,000 − $0) / 70,000 barrels
= $10 per barrel

Step 2:

Depletion expense = Depletion per unit × Number of units extracted
= $10 per barrel × 3,000 barrels
= $30,000 (year 1)

The depletion entry for the year is as follows:

A↓	=	L	+	E↓
Accumulated Depletion—Oil Reserves↑				Depletion Expense—Oil Reserves↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Depletion Expense—Oil Reserves	30,000	
	Accumulated Depletion—Oil Reserves		30,000
	To record depletion.		

Accumulated Depletion is a contra asset account similar to Accumulated Depreciation. Natural resources can be reported on the balance sheet as shown for oil reserves in the following example:

Oil Reserves	$ 700,000	
Less: Accumulated Depletion—Oil Reserves	(30,000)	$ 670,000

Try It!

4. Amplify Petroleum holds huge reserves of oil. Assume that at the end of 2015, Amplify Petroleum's cost of oil reserves totaled $80,000,000, representing 100,000,000 barrels of oil. Suppose Amplify Petroleum removed and sold 20,000,000 barrels of oil during 2016. Journalize depletion expense for 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S9-11. MyAccountingLab

HOW ARE INTANGIBLE ASSETS ACCOUNTED FOR?

Learning Objective 5
Account for intangible assets

Intangible assets are assets that have no physical form. Instead, these assets convey special rights from patents, copyrights, trademarks, and other creative works.

Intangible Asset
An asset with no physical form that is valuable because of the special rights it carries.

In our technology-driven economy, intangibles are very important. The intellectual property of a business is difficult to measure. However, when one company buys another, we get a glimpse of the value of the intellectual property of the acquired company. For example, in 2006, Google acquired YouTube. Google said it would give $1.65 billion even though YouTube had never had a profitable year. Why so much for so little? Because YouTube's intangible assets were extremely valuable. Intangibles can account for most of a company's market value, so companies must value their intangibles just as they value other assets, such as merchandise inventory and equipment.

Accounting for Intangibles

Intangible assets that are purchased are recorded at cost. If an intangible is not purchased, only some limited costs can be capitalized. Most purchased intangibles are expensed through **amortization**, the allocation of the cost of an intangible asset to expense over its useful life. Amortization applies to intangibles exactly as depreciation applies to equipment and depletion to oil and timber.

Amortization
The process by which businesses spread the allocation of an intangible asset's cost over its useful life.

Intangibles either have a definite life or an indefinite life. Intangibles with an indefinite life have no factors (such as legal and contractual obligations) that limit the usage of the intangible asset. Only intangibles that have a definite life are amortized. Intangible assets with an indefinite life are tested for impairment annually. **Impairment** occurs when the fair value of an asset is less than the book value. In other words, there has been a permanent decline in the value of the asset. If an impairment occurs, the company records a loss in the period that the decline is identified.

Impairment
A permanent decline in asset value.

Specific Intangibles

As noted earlier, patents, copyrights, and trademarks are intangible assets. The accounting for the purchase and amortization of each asset is similar.

Patents

A **patent** is an intangible asset that is a federal government grant conveying an exclusive 20-year right to produce and sell an invention. The invention may be a process, product, or formula—for example, the Dolby noise-reduction process or a prescription drug formula. The acquisition cost of a patent is debited to the Patent account.

Patent
An intangible asset that is a federal government grant conveying an exclusive 20-year right to produce and sell a process, product, or formula.

Like any other asset, a patent may be purchased. Suppose Smart Touch Learning pays $200,000 to acquire a patent on January 1. The accounting clerk records the following entry at acquisition:

A↑↓		L	+	E
Patent↑ Cash↓	=			

Date	Accounts and Explanation	Debit	Credit
Jan. 1	Patent	200,000	
	Cash		200,000
	To record purchase of patent.		

Smart Touch Learning believes this patent's useful life is only five years because it is likely that a new, more efficient process will be developed within that time. Amortization expense is calculated using the straight-line method as follows:

Amortization expense = (Cost − Residual value) / Useful life
= ($200,000 − $0) / 5 years
= $40,000 per year

For most intangibles, the residual value will be zero.

The company's accounting clerk would record the following adjusting entry for amortization:

A↓		L	+	E↓
Patent↓	=			Amortization Expense—Patent↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Amortization Expense—Patent	40,000	
	Patent		40,000
	To record amortization of patent.		

Notice that Smart Touch Learning credited the amortization directly to the intangible asset, Patent, instead of using an Accumulated Amortization account. A company may credit an intangible asset directly when recording amortization expense, or it may use the account Accumulated Amortization. **Companies frequently choose to credit the asset account directly because the residual value is generally zero and there is no physical asset to dispose of at the end of its useful life, so the asset essentially removes itself from the books through the process of amortization.**

Why was the account Patent credited instead of Accumulated Amortization—Patent?

At the end of the first year, Smart Touch Learning will report this patent at $160,000 ($200,000 cost minus first-year amortization of $40,000), the next year at $120,000, and so forth. Each year for five years the value of the patent will be reduced until the end of its five-year life, at which point its book value will be $0.

Copyrights and Trademarks

A **copyright** is the exclusive right to reproduce and sell a book, musical composition, film, other work of art, or intellectual property. Copyrights also protect computer software

Copyright
Exclusive right to reproduce and sell a book, musical composition, film, other work of art, or intellectual property.

programs, such as Microsoft® Windows® and the Microsoft® Excel® spreadsheet software. Issued by the federal government, a copyright is granted for the life of the creator plus 70 years.

A company may pay a large sum to purchase an existing copyright. For example, the publisher Simon & Schuster may pay $1 million for the copyright on a popular novel because it thinks it will be able to profit from selling the novel. Even though copyrights have a long legal life (life of creator plus 70 years), most copyrights have short useful lives. Copyrights are amortized over their legal life or useful life, whichever is shorter.

A **trademark** (also called *trade name*) is an asset that represents distinctive identifications of products or services, such as the Nike "swoosh" or the McDonald's "golden arches." Legally protected slogans include Chevrolet's "Like a Rock" and De Beers's "A Diamond Is Forever." The cost of a trademark or trade name is amortized over its useful life.

Trademark
An asset that represents distinctive identifications of a product or service.

Franchises and Licenses

Franchises are privileges granted by a business to sell goods or services under specified conditions. The Dallas Cowboys football organization is a franchise granted by the National Football League. McDonald's and Subway are well-known business franchises. **Licenses** are privileges granted by a government to use public property in performing services. A radio station might be granted permission by the federal government to use the airwaves to broadcast its music. The acquisition cost of a franchise or license is amortized over its useful life.

Franchise
Privilege granted by a business to sell a product or service under specified conditions.

License
Privilege granted by a government to use public property in performing services.

Goodwill

In accounting, **goodwill** is the excess of the cost to purchase another company over the market value of its net assets (assets minus liabilities). Goodwill is the value paid above the net worth of the company's assets and liabilities.

Suppose White Corporation acquired Mocha, Inc. on January 1, 2016. The sum of the market values of Mocha's assets was $9 million and its liabilities totaled $1 million, so Mocha's net assets totaled $8 million. Suppose White paid $10 million to purchase Mocha. In this case, White paid $2 million above the market value of Mocha's net assets. Therefore, that $2 million is considered goodwill and is computed as follows:

Goodwill
Excess of the cost of an acquired company over the sum of the market values of its net assets (assets minus liabilities).

Purchase price to acquire Mocha		$ 10,000,000
Market value of Mocha's assets	$ 9,000,000	
Less: Market value of Mocha's liabilities	(1,000,000)	
Less: Market value of Mocha's net assets		8,000,000
Goodwill		$ 2,000,000

White's entry to record the purchase of Mocha, including the goodwill that White purchased, would be as follows:

Date	Accounts and Explanation	Debit	Credit
Jan. 1	Assets	9,000,000	
	Goodwill	2,000,000	
	Liabilities		1,000,000
	Cash		10,000,000
	To record purchase of Mocha Company.		

A↑		L↑	+	E
Assets↑ Goodwill↑ Cash↓	=	Liabilities↑		

Goodwill has some special features:

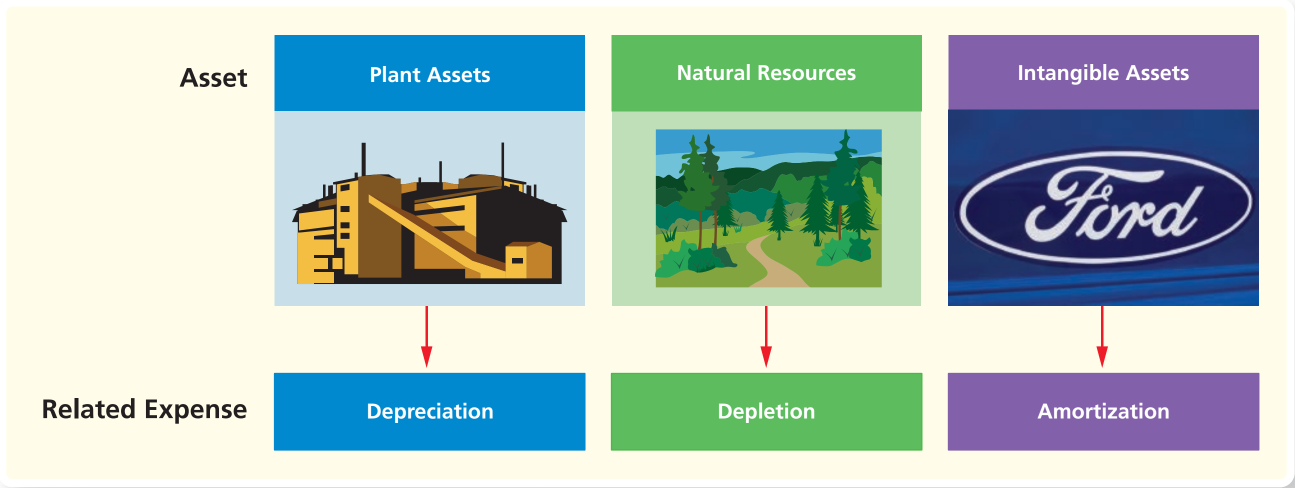
- Goodwill is recorded only by an acquiring company when it purchases another company and pays more for that company than the market value of the net assets acquired (as in our entry above where White purchased Mocha for $2 million more than the market value of Mocha's net assets). An outstanding reputation may create goodwill, but that company never records goodwill for its own business.
- According to Generally Accepted Accounting Principles (GAAP), goodwill is *not* amortized. Instead, the acquiring company measures the fair value of its acquired goodwill each year. If the goodwill has increased in fair value, there is nothing to record. But if goodwill's fair value has decreased, then the company records an impairment loss and writes the goodwill down by debiting (increasing) the Impairment Loss on Goodwill account and crediting (decreasing) the Goodwill account.

Reporting of Intangible Assets

Intangible assets are reported on the balance sheet similarly to plant assets. If a company uses the contra account, Accumulated Amortization, this account is not typically shown on the balance sheet. Instead, intangible assets are shown only at their net book value. Amortization expense is reported on the income statement as part of operations.

Exhibit 9-11 summarizes our coverage of plant assets, natural resources, and intangibles. Remember that plant assets are those assets that have physical characteristics and are used in operations. Natural resources are assets that come from the physical earth and can be ultimately used up, and intangible assets are assets whose value is not derived from their physical substance.

Exhibit 9-11 | **Assets and Their Related Expenses**



Try It!

5. On January 1, Orange Manufacturing paid $40,000 for a patent. Although it gives legal protection for 20 years, the patent is expected to provide a competitive advantage for only eight years. Assuming the straight-line method of amortization, record the journal entry for amortization for year 1.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S9-12 and S9-13. MyAccountingLab

HOW DO WE USE THE ASSET TURNOVER RATIO TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 6

Use the asset turnover ratio to evaluate business performance

The **asset turnover ratio** measures the amount of net sales generated for each average dollar of total assets invested. This ratio measures how well a company is using its assets to generate sales revenue. To compute this ratio, we divide net sales by average total assets. Using net sales and total assets (in thousands) from **Green Mountain Coffee Roasters, Inc.'s** 2013 Annual Report (see Appendix A at the end of the book), we can calculate the asset turnover ratio.

Asset Turnover Ratio

Measures how efficiently a business uses its average total assets to generate sales. Net sales / Average total assets.

	September 28, 2013	September 29, 2012
Net sales	$ 4,358,100	$ 3,859,198
Total assets	3,761,548	3,615,789

Asset turnover ratio = Net sales / Average total assets
= $4,358,100 / [($3,761,548 + $3,615,789) / 2]
= 1.18 times (rounded)

Suppose that the asset turnover ratio for the industry is 1.7 times. Green Mountain's asset turnover ratio of 1.18 times is significantly lower than the industry average. This tells us that Green Mountain is producing $1.18 of sales revenue for each dollar ($1.00) of assets invested. Green Mountain should evaluate ways to increase its asset turnover ratio such as increasing net sales or decreasing average total assets. A high asset turnover ratio is desirable.

Try It!

6. Maxim Company reported beginning and ending total assets of $140,000 and $160,000, respectively. Its net sales for the year was $240,000. What was Maxim's asset turnover ratio?

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S9-14. MyAccountingLab

Appendix 9A: Exchanging Plant Assets

HOW ARE EXCHANGES OF PLANT ASSETS ACCOUNTED FOR?

Learning Objective 7
Journalize entries for the exchange of plant assets

Commercial Substance
A characteristic of a transaction that causes a change in future cash flows.

Earlier in the chapter, we discussed ways that businesses could dispose of plant assets. One way is for a business to exchange a plant asset for another plant asset. In this section, we evaluate how to account for exchanges that have *commercial substance*. An exchange has **commercial substance** if the future cash flows change as a result of the transaction. In other words, an exchange has commercial substance if, in the future, cash flows (receipts of revenue or payment of expenses) of the business will change because of the exchange. For example, exchanging an older asset for a new asset will increase productivity, thereby creating more revenue for the business. Therefore, this exchange has commercial substance.

Exchanges that have commercial substance require any gain or loss on the transaction to be recognized. The old asset will be removed from the books, and the new asset will be recorded at its market value. Exchanges that lack commercial substance ignore any gain or loss on the transaction, except in limited situations. The new asset is recorded at the old asset's book value plus cash paid and minus cash received instead of at market value.

Exchange of Plant Assets—Gain Situation

Suppose that on December 31, Smart Touch Learning exchanges used equipment for new equipment. The old equipment has a historical cost of $10,000 and accumulated depreciation of $9,000. Its current book value is $1,000 ($10,000 − $9,000). The company acquires the new equipment with a market value of $8,000 and pays cash of $2,000. Assuming this exchange has commercial substance, the gain will be calculated as follows:

Market value of assets received		$ 8,000
Less:		
Book value of asset exchanged	$ 1,000	
Cash paid	2,000	3,000
Gain or (Loss)		$ 5,000

The accounting clerk records the following entry:

A↑		L	+	E↑
Equipment (new)↑ Accumulated Depreciation—Equipment↓ Equipment (old)↓ Cash↓	=			Gain on Disposal↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Equipment (new)	8,000	
	Accumulated Depreciation—Equipment	9,000	
	Equipment (old)		10,000
	Cash		2,000
	Gain on Disposal		5,000
	Exchanged old equipment and cash for new equipment.		

Cash

		2,000	Dec. 31

Equipment (new)

Dec. 31	8,000		

Equipment (old)

	10,000	10,000	Dec. 31
Bal.	0		

Accumulated Depreciation—Equipment

		9,000	
Dec. 31	9,000		
		0	Bal.

Gain on Disposal

		5,000	Dec. 31

Exchange of Plant Assets—Loss Situation

Suppose instead that on December 31, Smart Touch Learning exchanges used equipment for new equipment. The old equipment has a historical cost of $10,000 and accumulated depreciation of $9,000. Its current book value is $1,000 ($10,000 − $9,000). The company acquires the new equipment with a market value of $3,000 and pays cash of $2,500. Assuming this exchange has commercial substance, the loss will be calculated as follows:

Market value of assets received		$ 3,000
Less:		
Book value of asset exchanged	$ 1,000	
Cash paid	2,500	3,500
Gain or (Loss)		$ (500)

The accounting clerk records the following entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Equipment (new)	3,000	
	Accumulated Depreciation—Equipment	9,000	
	Loss on Disposal	500	
	Equipment (old)		10,000
	Cash		2,500
	Exchanged old equipment and cash for new equipment.		

A↓	=	L	+	E↓
Equipment (new)↑ Accumulated Depreciation—Equipment↓ Equipment (old)↓ Cash↓				Loss on Disposal↑

Cash

		2,500	Dec. 31

Equipment (new)

Dec. 31	3,000		

Equipment (old)

	10,000	10,000	Dec. 31
Bal.	0		

Accumulated Depreciation—Equipment

		9,000	
Dec. 31	9,000		
		0	Bal.

Loss on Disposal

Dec. 31	500		

Try It!

7A. Arca Salvage, Inc. purchased equipment for $10,000. Arca recorded total depreciation of $8,000 on the equipment. Assume that Arca exchanged the old equipment for new equipment, paying $4,000 cash. The fair market value of the new equipment is $5,000. Journalize Arca's exchange of equipment. Assume this exchange has commercial substance.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S9A-15 and S9A-16. MyAccountingLab

REVIEW

> Things You Should Know

1. How does a business measure the cost of a plant asset?

- Plant assets are long-lived, tangible assets used in the operations of a business.
- Plant assets are recorded at historical cost—the amount paid for the asset. This includes the purchase price plus taxes, purchase commissions, and all other amounts paid to ready the asset for its intended use.
- A lump-sum purchase involves paying a single price for multiple assets. The cost of each asset purchased must be identified based on the relative-market-value method.
- Two additional types of expenditures are often incurred on plant assets:
    - Capital expenditures—debited to an asset account because it increases the asset's capacity or efficiency or extends the asset's useful life
    - Revenue expenditures—debited to Repairs and Maintenance Expense because they are incurred to maintain the asset in working order

2. What is depreciation, and how is it computed?

- Depreciation is the allocation of a plant asset's cost to expense over its useful life.
- Three common depreciation methods are:
    - Straight-line method—allocates an equal amount of depreciation to each year
    - Units-of-production method—allocates a varying amount of depreciation each year based on an asset's usage
    - Double-declining-balance method—an accelerated depreciation method that computes annual depreciation by multiplying the depreciable asset's book value by a constant percent that is two times the straight-line rate
- Modified Accelerated Cost Recovery System (MACRS) is used for tax purposes.
- Occasionally a business may change its estimated residual value or estimated useful life of a depreciable asset. This change requires depreciation to be recalculated in the year of change and moving forward.
- Plant assets are reported on the balance sheet at book value (cost – accumulated depreciation).

3. How are disposals of plant assets recorded?

- There are four steps to recording disposals.
  - Step 1: Bring the depreciation up to date.
  - Step 2: Remove the old, disposed-of asset and associated accumulated depreciation from the books.
  - Step 3: Record the value of any cash received (or paid) in the disposal of the asset.
  - Step 4: Determine the amount of any gain or loss. (Market value of assets received compared to the book value of the asset disposed of.)
- Review Exhibit 9-10 for a summary of disposal of plant assets journal entries.

4. How are natural resources accounted for?

- Natural resources are assets that come from the earth and are consumed.
- Depletion is the process by which businesses spread the allocation of a natural resource's cost over its usage.
- Depletion expense is computed by the units-of-production method.

5. How are intangible assets accounted for?

- Intangible assets are assets that have no physical form and are valuable because of special rights they carry.
- Amortization is the process by which businesses spread the allocation of an intangible asset's cost over its useful life.
- Amortization expense is computed by the straight-line method.

6. How do we use the asset turnover ratio to evaluate business performance?

- The asset turnover ratio measures the amount of net sales generated for each average dollar of total assets invested.
- Net sales / Average total assets.

7. How are exchanges of plant assets accounted for? (Appendix 9A)

- Exchanges that have commercial substance require the recording of any gain or loss on the transaction.
- Exchanges that lack commercial substance ignore any gain or loss on the transaction, except in a few limited cases.

> Summary Problem

Latté On Demand purchased a coffee drink machine on January 1, 2016, for $44,000. Expected useful life is 10 years or 100,000 drinks. In 2016, 3,000 drinks were sold, and in 2017, 14,000 drinks were sold. Residual value is $4,000.

Requirements

1. Determine the depreciation expense for 2016 and 2017 using the following methods:
   - **a.** Straight-line
   - **b.** Units-of-production
   - **c.** Double-declining-balance

2. Prepare a schedule that shows annual depreciation expense, accumulated depreciation, and book value for 2016 and 2017 using the following methods:
   - **a.** Straight-line
   - **b.** Units-of-production
   - **c.** Double-declining-balance
3. Assume that Latté On Demand sold the equipment for $27,000 cash on July 1, 2018. Assume that management has depreciated the equipment by using the double-declining-balance method. Record Latté On Demand's depreciation for 2018 and the sale of the equipment on July 1, 2018.

> Solution

Requirement 1

a.

2016: ($44,000 − $4,000) / 10 years = $4,000
2017: ($44,000 − $4,000) / 10 years = $4,000

b.

Depreciation per unit = ($44,000 − $4,000) / 100,000 drinks = $0.40 per drink
2016: $0.40 per drink × 3,000 drinks = $1,200
2017: $0.40 per drink × 14,000 drinks = $5,600

c.

2016: ($44,000 − $0) × 2 × (1 / 10) = $8,800
2017: ($44,000 − $8,800) × 2 × (1 / 10) = $7,040

Requirement 2

a.

Year	Annual Depreciation Expense	Accumulated Depreciation	Book Value
1-1-2016			$ 44,000
12-31-2016	$ 4,000	$ 4,000	40,000
12-31-2017	4,000	8,000	36,000

b.

Year	Annual Depreciation Expense	Accumulated Depreciation	Book Value
1-1-2016			$ 44,000
12-31-2016	$ 1,200	$ 1,200	42,800
12-31-2017	5,600	6,800	37,200

c.

Year	Annual Depreciation Expense	Accumulated Depreciation	Book Value
1-1-2016			$ 44,000
12-31-2016	$ 8,800	$ 8,800	35,200
12-31-2017	7,040	15,840	28,160

Requirement 3

Depreciation expense for 2018:

($44,000 − $15,840) × 2 × (1 / 10) × (6 / 12) = $2,816

Date	Accounts and Explanation	Debit	Credit
2018			
Jul. 1	Depreciation Expense—Equipment	2,816	
	Accumulated Depreciation—Equipment		2,816
	To record depreciation on equipment.		
1	Cash	27,000	
	Accumulated Depreciation—Equipment ($15,840 + $2,816)	18,656	
	Gain on Disposal		1,656
	Equipment		44,000
	Sold equipment for cash.		

> Key Terms

Accelerated Depreciation Method (p. 508)

Amortization (p. 521)

Asset Turnover Ratio (p. 525)

Book Value (p. 506)

Capital Expenditure (p. 503)

Capitalize (p. 501)

Commercial Substance (p. 526) (Appendix 9A)

Copyright (p. 522)

Cost Principle (p. 500)

Depletion (p. 520)

Depreciable Cost (p. 505)

Depreciation (p. 499)

Double-Declining-Balance Method (p. 508)

Extraordinary Repair (p. 503)

Franchise (p. 523)

Goodwill (p. 523)

Impairment (p. 521)

Intangible Asset (p. 521)

Land Improvement (p. 500)

License (p. 523)

Modified Accelerated Cost Recovery System (MACRS) (p. 511)

Natural Resource (p. 520)

Obsolete (p. 504)

Patent (p. 522)

Plant Asset (p. 499)

Relative-Market-Value Method (p. 502)

Residual Value (p. 505)

Revenue Expenditure (p. 503)

Straight-Line Method (p. 506)

Trademark (p. 523)

Units-of-Production Method (p. 507)

Useful Life (p. 505)

> Quick Check

Learning Objective 1

1. Which cost is *not* recorded as part of the cost of a building?
   - **a.** Real estate commission paid to buy the building
   - **b.** Construction materials and labor
   - **c.** Concrete for the building's foundation
   - **d.** Annual building maintenance

Learning Objective 1

2. How should you record a capital expenditure?
   - **a.** Debit a liability
   - **b.** Debit capital
   - **c.** Debit an expense
   - **d.** Debit an asset

Learning Objective 2

3. Which method almost always produces the most depreciation in the first year?
   - **a.** Units-of-production
   - **b.** Straight-line
   - **c.** Double-declining-balance
   - **d.** All produce the same depreciation in the first year.

Learning Objective 2

4. A Celty Airline jet costs $28,000,000 and is expected to fly 200,000,000 miles during its 10-year life. Residual value is expected to be zero because the plane was used when acquired. If the plane travels 1,000,000 miles the first year, how much depreciation should Celty Airline record under the units-of-production method?
   - **a.** $2,800,000
   - **b.** $140,000
   - **c.** $560,000
   - **d.** Cannot be determined from the data given

Learning Objective 3

5. A copy machine costs $45,000 when new and has accumulated depreciation of $44,000. Suppose Print and Photo Center junks this machine and receives nothing. What is the result of the disposal transaction?
   - **a.** No gain or loss
   - **b.** Gain of $1,000
   - **c.** Loss of $1,000
   - **d.** Loss of $45,000

Learning Objective 3

6. Suppose Print and Photo Center in the preceding question sold the machine for $1,000. What is the result of this disposal transaction?
   - **a.** Loss of $44,000
   - **b.** Gain of $1,000
   - **c.** Loss of $1,000
   - **d.** No gain or loss

Learning Objective 4

7. Which method is used to compute depletion?
   - **a.** Double-declining-balance method
   - **b.** Straight-line method
   - **c.** Depletion method
   - **d.** Units-of-production method

Learning Objective 5

8. Which intangible asset is recorded only as part of the acquisition of another company?
   - **a.** Patent
   - **b.** Goodwill
   - **c.** Copyright
   - **d.** Franchise

Learning Objective 6

9. Liberty Corporation reported beginning and ending total assets of $25,000 and $22,000, respectively. Its net sales for the year were $18,800. What was Liberty's asset turnover ratio?
   - **a.** 0.75
   - **b.** 0.85
   - **c.** 0.80
   - **d.** 1.25

Learning Objective 7
Appendix 9A

10A. A truck costs $50,000 when new and has accumulated depreciation of $35,000. Suppose Wilson Towing exchanges the truck for a new truck. The new truck has a market value of $60,000, and Wilson pays cash of $40,000. Assume the exchange has commercial substance. What is the result of this exchange?

a. No gain or loss
b. Gain of $5,000
c. Loss of $5,000
d. Gain of $45,000

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What are plant assets? Provide some examples.

2. Plant assets are recorded at historical cost. What does the historical cost of a plant asset include?

3. How do land improvements differ from land?

4. What does the word *capitalize* mean?

5. What is a lump-sum purchase, and how is it accounted for?

6. What is the difference between a capital expenditure and a revenue expenditure? Give an example of each.

7. What is depreciation? What are the methods described in the chapter that can be used to compute depreciation?

8. Which depreciation method ignores residual value until the last year of depreciation? Why?

9. How does a business decide which depreciation method is best to use?

10. What is the depreciation method that is used for tax accounting purposes? How is it different than the methods that are used for financial accounting purposes?

11. If a business changes the estimated useful life or estimated residual value of a plant asset, what must the business do in regard to depreciation expense?

12. What financial statement is plant assets reported on, and how?

13. How is discarding of a plant asset different from selling a plant asset?

14. How is gain or loss determined when disposing of plant assets? What situation constitutes a gain? What situation constitutes a loss?

15. What is a natural resource? What is the process by which businesses spread the allocation of a natural resource's cost over its usage?

16. What is an intangible asset? Provide some examples.

17. What is the process by which businesses spread the allocation of an intangible asset's cost over its useful life?

18. What is goodwill? Is goodwill amortized? What happens if the value of goodwill has decreased at the end of the year?

19. What does the asset turnover ratio measure, and how is it calculated?

20A. What does it mean if an exchange of plant assets has commercial substance? Are gains and losses recorded on the books because of the exchange?

> Short Exercises

Learning Objective 1

S9-1 Determining the cost of an asset

Alton Clothing purchased land, paying $88,000 cash plus a $250,000 note payable. In addition, Alton paid delinquent property tax of $1,900, title insurance costing $500, and $4,200 to level the land and remove an unwanted building. Record the journal entry for purchase of the land.

Learning Objective 1

S9-2 Making a lump-sum asset purchase

Foley Distribution Service paid $130,000 for a group purchase of land, building, and equipment. At the time of the acquisition, the land had a market value of $70,000, the building $42,000, and the equipment $28,000. Journalize the lump-sum purchase of the three assets for a total cost of $130,000, the amount for which the business signed a note payable.

Learning Objective 2

S9-3 Computing first-year depreciation and book value

At the beginning of the year, Austin Airlines purchased a used airplane for $33,500,000. Austin Airlines expects the plane to remain useful for five years (4,000,000 miles) and to have a residual value of $5,500,000. The company expects the plane to be flown 1,100,000 miles during the first year.

Requirements

1. Compute Austin Airlines's *first-year* depreciation expense on the plane using the following methods:
   a. Straight-line
   b. Units-of-production
   c. Double-declining-balance
2. Show the airplane's book value at the end of the first year for all three methods.

Learning Objective 2

S9-4 Computing second-year depreciation and accumulated depreciation

At the beginning of 2016, Logan Service purchased a used airplane at a cost of $46,000,000. Logan Service expects the plane to remain useful for eight years (6,000,000 miles) and to have a residual value of $4,000,000. Logan Service expects the plane to be flown 1,500,000 miles the first year and 1,200,000 miles the second year.

Requirements

1. Compute *second-year (2017)* depreciation expense on the plane using the following methods:
   a. Straight-line
   b. Units-of-production
   c. Double-declining-balance
2. Calculate the balance in Accumulated Depreciation at the end of the second year for all three methods.

Learning Objective 2

S9-5 Calculating partial-year depreciation

On September 30, 2015, Meggie Services purchased a copy machine for $38,000. Meggie Services expects the machine to last for four years and have a residual value of $2,000. Compute depreciation expense on the machine for the year ended December 31, 2015, using the straight-line method.

S9-6 Changing the estimated life of an asset

Learning Objective 2

Assume that Global Positioning Systems paid $112,000 for equipment with a 14-year life and zero expected residual value. After using the equipment for six years, the company determines that the asset will remain useful for only four more years.

Requirements

1. Record depreciation expense on the equipment for year 7 by the straight-line method.
2. What is accumulated depreciation at the end of year 7?

S9-7 Discarding of a fully depreciated asset

Learning Objective 3

On June 15, 2015, Perfect Furniture discarded equipment that had a cost of $12,000, a residual value of $0, and was fully depreciated. Journalize the disposal of the equipment.

S9-8 Discarding an asset

Learning Objective 3

On September 30, 2016, Modern Landscapes discarded equipment that had a cost of $24,800. Accumulated Depreciation as of December 31, 2015, was $23,000. Assume annual depreciation on the equipment is $1,800. Journalize the partial-year depreciation expense and disposal of the equipment.

S9-9 Selling an asset at gain or loss

Learning Objective 3

Mill Creek Golf Club purchased equipment on January 1, 2016, for $31,500. Suppose Mill Creek Golf Club sold the equipment for $22,000 on December 31, 2018. Accumulated Depreciation as of December 31, 2018, was $21,000. Journalize the sale of the equipment, assuming straight-line depreciation was used.

S9-10 Selling an asset at gain or loss

Learning Objective 3

Pelman Company purchased equipment on January 1, 2016, for $32,000. Suppose Pelman sold the equipment for $5,000 on December 31, 2017. Accumulated Depreciation as of December 31, 2017, was $22,000. Journalize the sale of the equipment, assuming straight-line depreciation was used.

S9-11 Accounting for depletion of natural resources

Learning Objective 4

South Shore Petroleum holds huge reserves of oil assets. Assume that at the end of 2016, South Shore Petroleum's cost of oil reserves totaled $72,000,000,000, representing 9,000,000,000 barrels of oil.

Requirements

1. Which method does South Shore Petroleum use to compute depletion?
2. Suppose South Shore Petroleum removed and sold 400,000,000 barrels of oil during 2017. Journalize depletion expense for 2017.

S9-12 Accounting for an intangible asset

Learning Objective 5

On March 1, 2016, Twist Company purchased a patent for $168,000 cash. Although the patent gives legal protection for 20 years, the patent is expected to be used for only five years.

Requirements

1. Journalize the purchase of the patent.
2. Journalize the amortization expense for the year ended December 31, 2016. Assume straight-line amortization.

Learning Objective 5

S9-13 Accounting for goodwill

TXL Advertising paid $250,000 to acquire *Seacoast Report*, a weekly advertising paper. At the time of the acquisition, *Seacoast Report*'s balance sheet reported total assets of $140,000 and liabilities of $80,000. The fair market value of *Seacoast Report*'s assets was $110,000. The fair market value of *Seacoast Report's* liabilities was $80,000.

Requirements

1. How much goodwill did TXL Advertising purchase as part of the acquisition of *Seacoast Report*?
2. Journalize TXL Advertising's acquisition of *Seacoast Report*.

Learning Objective 6

S9-14 Computing the asset turnover ratio

Bacci, Inc. had net sales of $54,800,000 for the year ended May 31, 2016. Its beginning and ending total assets were $56,800,000 and $96,400,000, respectively. Determine Bacci's asset turnover ratio for year ended May 31, 2016.

Learning Objective 7
Appendix 9A

S9A-15 Exchanging plant assets

Alpha Communications, Inc. purchased a computer for $2,600, debiting Computer Equipment. During 2014 and 2015, Alpha Communications, Inc. recorded total depreciation of $1,800 on the computer. On January 1, 2016, Alpha Communications, Inc. traded in the computer for a new one, paying $2,400 cash. The fair market value of the new computer is $4,300. Journalize Alpha Communications, Inc.'s exchange of computers. Assume the exchange had commercial substance.

Learning Objective 7
Appendix 9A

S9A-16 Exchanging plant assets

Orange Corporation purchased equipment for $30,000. Orange recorded total depreciation of $24,000 on the equipment. On January 1, 2016, Orange traded in the equipment for new equipment, paying $23,500 cash. The fair market value of the new equipment is $28,500. Journalize Orange Corporation's exchange of equipment. Assume the exchange had commercial substance.

> Exercises

Learning Objective 1

1. Land $365,000

E9-17 Determining the cost of assets

Pawtucket Furniture purchased land, paying $75,000 cash plus a $290,000 note payable. In addition, Pawtucket paid delinquent property tax of $2,000, title insurance costing $3,500, and $7,000 to level the land and remove an unwanted building. The company then constructed an office building at a cost of $350,000. It also paid $55,000 for a fence around the property, $12,000 for a sign near the entrance, and $10,000 for special lighting of the grounds.

Requirements

1. Determine the cost of the land, land improvements, and building.
2. Which of these assets will Pawtucket depreciate?

E9-18 Making a lump-sum purchase of assets

Learning Objective 1

Lot 3 $108,750

Riverwood Properties bought three lots in a subdivision for a lump-sum price. An independent appraiser valued the lots as follows:

Lot	Appraised Value
1	$ 66,000
2	176,000
3	198,000

Riverwood paid $265,000 in cash. Record the purchase in the journal, identifying each lot's cost in a separate Land account. Round decimals to two places, and use the computed percentages throughout.

E9-19 Distinguishing capital expenditures from revenue expenditures

Learning Objective 1

Consider the following expenditures:

a. Purchase price.
b. Ordinary recurring repairs to keep the machinery in good working order.
c. Lubrication before machinery is placed in service.
d. Periodic lubrication after machinery is placed in service.
e. Major overhaul to extend useful life by three years.
f. Sales tax paid on the purchase price.
g. Transportation and insurance while machinery is in transit from seller to buyer.
h. Installation.
i. Training of personnel for initial operation of the machinery.

Classify each of the expenditures as a capital expenditure or a revenue expenditure related to machinery.

E9-20 Computing depreciation—three methods

Learning Objective 2

1. Double-declining-balance, 12/31/17, Exp. $5,250

Crispy Fried Chicken bought equipment on January 2, 2016, for $39,000. The equipment was expected to remain in service for four years and to perform 11,000 fry jobs. At the end of the equipment's useful life, Crispy estimates that its residual value will be $6,000. The equipment erformed 1,100 jobs the first year, 3,300 the second year, 4,400 the third year, and 2,200 the fourth year.

(Requirement 1 only)

Requirements

1. Prepare a schedule of *depreciation expense, accumulated depreciation,* and *book value* per year for the equipment under the three depreciation methods. Show your computations. *Note:* Three depreciation schedules must be prepared.
2. Which method tracks the wear and tear on the equipment most closely?

E9-21 Changing an asset's useful life and residual value

Learning Objective 2

Yr. 16 $42,400

Boston Hardware Consultants purchased a building for $820,000 and depreciated it on a straight-line basis over a 40-year period. The estimated residual value is $100,000. After using the building for 15 years, Boston realized that wear and tear on the building would wear it out before 40 years and that the estimated residual value should be $86,000. Starting with the 16th year, Boston began depreciating the building over a revised total life of 25 years using the new residual value. Journalize depreciation expense on the building for years 15 and 16.

Learning Objectives 2, 3

Depr. Exp. $2,400

E9-22 Recording partial-year depreciation and sale of an asset

On January 2, 2015, Snug Clothing Consignments purchased showroom fixtures for $11,000 cash, expecting the fixtures to remain in service for five years. Snug has depreciated the fixtures on a double-declining-balance basis, with zero residual value. On August 31, 2016, Snug sold the fixtures for $5,000 cash. Record both depreciation expense for 2016 and sale of the fixtures on August 31, 2016.

Learning Objectives 2, 3

Loss $(6,000)

E9-23 Recording partial-year depreciation and sale of an asset

On January 2, 2014, Pet Oasis purchased fixtures for $25,200 cash, expecting the fixtures to remain in service for eight years. Pet Oasis has depreciated the fixtures on a straight-line basis, with $6,000 residual value. On June 30, 2016, Pet Oasis sold the fixtures for $15,700 cash. Record both depreciation expense for 2016 and sale of the fixtures on June 30, 2016.

Learning Objective 4

$1.20 per ton

E9-24 Journalizing natural resource depletion

Sierra Mountain Mining paid $577,200 for the right to extract mineral assets from a 350,000-ton deposit. In addition to the purchase price, Sierra also paid a $600 filing fee, a $2,200 license fee to the state of Nevada, and $85,000 for a geological survey of the property. Because Sierra purchased the rights to the minerals only, it expects the asset to have a zero residual value. During the first year, Sierra removed and sold 30,000 tons of the minerals. Make journal entries to record (a) purchase of the minerals (debit Minerals), (b) payment of fees and other costs, and (c) depletion for the first year.

Learning Objectives 2, 5

2. Amort. Exp. $225,000

E9-25 Handling acquisition of patent, amortization, and change in useful life

Missy Printers (MP) manufactures printers. Assume that MP recently paid $800,000 for a patent on a new laser printer. Although it gives legal protection for 20 years, the patent is expected to provide a competitive advantage for only eight years.

Requirements

1. Assuming the straight-line method of amortization, make journal entries to record (a) the purchase of the patent and (b) amortization for the first full year.
2. After using the patent for four years, MP learns at an industry trade show that another company is designing a more efficient printer. On the basis of this new information, MP decides, starting with year 5, to amortize the remaining cost of the patent over two remaining years, giving the patent a total useful life of six years. Record amortization for year 5.

Learning Objective 5

2. Goodwill $7,000,000

E9-26 Measuring and recording goodwill

Princess has acquired several other companies. Assume that Princess purchased Kettle for $11,000,000 cash. The book value of Kettle's assets is $12,000,000 (market value, $16,000,000), and it has liabilities of $12,000,000 (market value, $12,000,000).

Requirements

1. Compute the cost of the goodwill purchased by Princess.
2. Record the purchase of Kettle by Princess.

Learning Objective 6

E9-27 Computing asset turnover ratio

Shutter Bee Photo reported the following figures on its December 31, 2016, income statement and balance sheet:

Net sales	$ 455,000	
	Dec. 31, 2016	**Dec. 31, 2015**
Cash	$ 30,000	$ 24,000
Accounts Receivable	60,000	63,000
Merchandise Inventory	80,000	78,000
Prepaid Expenses	12,000	6,000
Property, plant, and equipment, net	175,000	17,000

Compute the asset turnover ratio for 2016.

Learning Objective 7
Appendix 9A

2. Loss $(7,000)

E9A-28 Exchanging assets—two situations

Commerce Bank recently traded in office fixtures. Here are the facts:

Old fixtures:	**New fixtures:**
Cost, $99,000	Cash paid, $ 108,000
Accumulated depreciation, $65,000	Market value, $ 142,000

Requirements

1. Record Commerce Bank's trade-in of old fixtures for new ones. Assume the exchange had commercial substance.
2. Now let's change one fact. Commerce Bank feels compelled to do business with Shoreside Furniture, a bank customer, even though the bank can get the fixtures elsewhere at a better price. Commerce Bank is aware that the new fixtures' market value is only $135,000. Record the trade-in. Assume the exchange had commercial substance.

Learning Objectives 1, 2, 7
Appendix 9A

1. $12,870

E9A-29 Measuring asset cost, units-of-production depreciation, and asset trade

Pact Trucking Corporation uses the units-of-production depreciation method because units-of-production best measures wear and tear on the trucks. Consider these facts about one Mack truck in the company's fleet.

When acquired in 2013, the rig cost $450,000 and was expected to remain in service for 10 years or 1,000,000 miles. Estimated residual value was $120,000. The truck was driven 82,000 miles in 2013, 122,000 miles in 2014, and 162,000 miles in 2015. After 39,000 miles, on March 15, 2016, the company traded in the Mack truck for a less expensive Freightliner. Pact also paid cash of $27,000. Fair market value of the Mack truck was equal to its net book value on the date of the trade.

Requirements

1. Record the journal entry for depreciation expense in 2016.
2. Determine Pact's cost of the new truck.
3. Record the journal entry for the exchange of assets on March 15, 2016. Assume the exchange had commercial substance.

> Problems Group A

Learning Objectives 1, 2

1. Bldg. $446,100

P9-30A Determining asset cost and recording partial-year depreciation

Park and Go, near an airport, incurred the following costs to acquire land, make land improvements, and construct and furnish a small building:

a.	Purchase price of three acres of land	$ 90,000
b.	Delinquent real estate taxes on the land to be paid by Park and Go	6,200
c.	Additional dirt and earthmoving	8,300
d.	Title insurance on the land acquisition	3,600
e.	Fence around the boundary of the property	9,500
f.	Building permit for the building	600
g.	Architect's fee for the design of the building	20,100
h.	Signs near the front of the property	9,600
i.	Materials used to construct the building	218,000
j.	Labor to construct the building	171,000
k.	Interest cost on construction loan for the building	9,300
l.	Parking lots on the property	29,500
m.	Lights for the parking lots	11,600
n.	Salary of construction supervisor (75% to building; 25% to parking lot and concrete walks)	40,000
o.	Furniture	11,700
p.	Transportation of furniture from seller to the building	2,700
q.	Additional fencing	6,200

Park and Go depreciates land improvements over 25 years, buildings over 40 years, and furniture over 12 years, all on a straight-line basis with zero residual value.

Requirements

1. Show how to account for each cost by listing the cost under the correct account. Determine the total cost of each asset.
2. All construction was complete and the assets were placed in service on July 1. Record partial-year depreciation for the year ended December 31.

Learning Objectives 1, 2

1. Units-of-production, 12/31/16, Dep. Exp. $14,000

P9-31A Determining asset cost, recording first-year depreciation, and identifying depreciation results that meet management objectives

On January 3, 2016, Speedway Delivery Service purchased a truck at a cost of $95,000. Before placing the truck in service, Speedway spent $4,000 painting it, $600 replacing tires, and $9,400 overhauling the engine. The truck should remain in service for five years and have a residual value of $10,000. The truck's annual mileage is expected to be 26,000 miles in each of the first four years and 19,750 miles in the fifth year—123,750 miles in total. In deciding which depreciation method to use, Jacob Nealy, the general manager, requests a depreciation schedule for each of the depreciation methods (straight-line, units-of-production, and double-declining-balance).

Requirements

1. Prepare a depreciation schedule for each depreciation method, showing asset cost, depreciation expense, accumulated depreciation, and asset book value.
2. Speedway prepares financial statements using the depreciation method that reports the highest net income in the early years of asset use. Consider the first year that Speedway uses the truck. Identify the depreciation method that meets the company's objectives.

P9-32A Recording lump-sum asset purchases, depreciation, and disposals

Learning Objectives 1, 2, 3

Sep. 1 Gain $88,000

Hilda Carr Associates surveys American eating habits. The company's accounts include Land, Buildings, Office Equipment, and Communication Equipment, with a separate Accumulated Depreciation account for each asset. During 2016, Hilda Carr completed the following transactions:

Jan. 1	Purchased office equipment, $112,000. Paid $74,000 cash and financed the remaining with a note payable.
Apr. 1	Acquired land and communication equipment in a lump-sum purchase. Total cost was $340,000 paid in cash. An independent appraisal valued the land at $267,750 and the communication equipment at $89,250.
Sep. 1	Sold a building that cost $540,000 (accumulated depreciation of $240,000 through December 31 of the preceding year). Grace Carol received $380,000 cash from the sale of the building. Depreciation is computed on a straight-line basis. The building has a 40-year useful life and a residual value of $60,000.
Dec. 31	Recorded depreciation as follows:
	Communication equipment is depreciated by the straight-line method over a five-year life with zero residual value.
	Office equipment is depreciated using the double-declining-balance method over five years with a $2,000 residual value.

Record the transactions in the journal of Hilda Carr Associates.

P9-33A Accounting for natural resources

Learning Objective 4

Dep. Exp. $1,186,250

Ernest Oil, Inc. has an account titled Oil and Gas Properties. Ernest paid $6,200,000 for oil reserves holding an estimated 400,000 barrels of oil. Assume the company paid $590,000 for additional geological tests of the property and $470,000 to prepare for drilling. During the first year, Ernest removed and sold 72,000 barrels of oil. Record all of Ernest's transactions, including depletion for the first year.

P9-34A Accounting for intangibles

Learning Objective 5

1. Goodwill $650,000

Midland Telecom provides communication services in Iowa, Nebraska, the Dakotas, and Montana. Midland purchased goodwill as part of the acquisition of Surley Wireless Enterprises, which had the following figures:

Book value of assets	$ 800,000
Market value of assets	900,000
Market value of liabilities	540,000

Requirements

1. Journalize the entry to record Midland's purchase of Surley Wireless for $320,000 cash plus a $480,000 note payable.
2. What special asset does Midland's acquisition of Surley Wireless identify? How should Midland Telecom account for this asset after acquiring Surley Wireless? Explain in detail.

Learning Objectives 2, 3, 7
Appendix 9A

Jan. 1 Gain $7,000

P9A-35A Journalizing partial-year depreciation and asset disposals and exchanges

During 2016, Zora Corporation completed the following transactions:

Jan. 1	Traded in old office equipment with book value of $60,000 (cost of $129,000 and accumulated depreciation of $69,000) for new equipment. Zora also paid $75,000 in cash. Fair value of new equipment is $142,000. Assume the exchange had commercial substance.
Apr. 1	Sold equipment that cost $48,000 (accumulated depreciation of $39,000 through December 31 of the preceding year). Zora received $6,100 cash from the sale of the equipment. Depreciation is computed on a straight-line basis. The equipment has a five-year useful life and a residual value of $0.
Dec. 31	Recorded depreciation as follows: Office equipment is depreciated using the double-declining-balance method over four years with a $4,000 residual value.

Record the transactions in the journal of Zora Corporation.

> Problems Group B

Learning Objectives 1, 2

1. Bldg. $471,000

P9-36B Determining asset cost and recording partial-year depreciation

Airport Parking, near an airport, incurred the following costs to acquire land, make land improvements, and construct and furnish a small building:

a.	Purchase price of three acres of land	$ 83,000
b.	Delinquent real estate taxes on the land to be paid by Airport Parking	6,200
c.	Additional dirt and earthmoving	8,800
d.	Title insurance on the land acquisition	3,300
e.	Fence around the boundary of the property	9,300
f.	Building permit for the building	700
g.	Architect's fee for the design of the building	20,600
h.	Signs near the front of the property	9,700
i.	Materials used to construct the building	213,000
j.	Labor to construct the building	167,000
k.	Interest cost on construction loan for the building	9,800
l.	Parking lots on the property	29,800
m.	Lights for the parking lots	11,100
n.	Salary of construction supervisor (75% to building; 25% to parking lot and concrete walks)	70,000
o.	Furniture	11,900
p.	Transportation of furniture from seller to the building	1,800
q.	Additional fencing	6,000

Airport Parking depreciates land improvements over 20 years, buildings over 30 years, and furniture over 12 years, all on a straight-line basis with zero residual value.

Requirements

1. Show how to account for each cost by listing the cost under the correct account. Determine the total cost of each asset.
2. All construction was complete and the assets were placed in service on September 1. Record partial-year depreciation for the year ended December 31.

P9-37B Determining asset cost, recording first-year depreciation, and identifying depreciation results that meet management objectives

Learning Objectives 1, 2

1. Units-of-production, 12/31/16, Dep. Exp. $18,900

On January 2, 2016, On Time Delivery Service purchased a truck at a cost of $62,000. Before placing the truck in service, On Time spent $4,000 painting it, $2,500 replacing tires, and $1,500 overhauling the engine. The truck should remain in service for five years and have a residual value of $5,000. The truck's annual mileage is expected to be 28,000 miles in each of the first four years and 18,000 miles in the fifth year-130,000 miles in total. In deciding which depreciation method to use, Jacob Nealy, the general manager, requests a depreciation schedule for each of the depreciation methods (straight-line, units-of-production, and double-declining-balance).

Requirements

1. Prepare a depreciation schedule for each depreciation method, showing asset cost, depreciation expense, accumulated depreciation, and asset book value.
2. On Time prepares financial statements using the depreciation method that reports the highest net income in the early years of asset use. Consider the first year that On Time uses the truck. Identify the depreciation method that meets the company's objectives.

P9-38B Recording lump-sum asset purchases, depreciation, and disposals

Learning Objectives 1, 2, 3

Sep. 1 Gain $68,000

Hilda Carr Associates surveys American eating habits. The company's accounts include Land, Buildings, Office Equipment, and Communication Equipment, with a separate Accumulated Depreciation account for each asset. During 2016, Hilda Carr completed the following transactions

Jan. 1	Purchased office equipment, $112,000. Paid $78,000 cash and financed the remaining with a note payable.
Apr. 1	Acquired land and communication equipment in a lump-sum purchase. Total cost was $410,000 paid in cash. An independent appraisal valued the land at $322,875 and the communication equipment at $107,625.
Sep. 1	Sold a building that cost $540,000 (accumulated depreciation of $240,000 through December 31 of the preceding year). Granny Carney received $360,000 cash from the sale of the building. Depreciation is computed on a straight-line basis. The building has a 40-year useful life and a residual value of $60,000.
Dec. 31	Recorded depreciation as follows: Communication equipment is depreciated by the straight-line method over a five-year life with zero residual value. Office equipment is depreciated using the double-declining-balance method over five years with a $5,000 residual value.

Record the transactions in the journal of Hilda Carr Associates.

P9-39B Accounting for natural resources

Learning Objective 4

Dep. Exp. $2,261,000

Gandy Oil Incorporated has an account titled Oil and Gas Properties. Gandy paid $6,100,000 for oil reserves holding an estimated 300,000 barrels of oil. Assume the company paid $560,000 for additional geological tests of the property and $480,000 to prepare for drilling. During the first year, Gandy removed and sold 95,000 barrels of oil. Record all of Gandy's transactions, including depletion for the first year.

Learning Objective 5

1. Goodwill $460,000

P9-40B Accounting for intangibles

Midland Telecom provides communication services in Iowa, Nebraska, the Dakotas, and Montana. Midland purchased goodwill as part of the acquisition of Surety Wireless Enterprises, which had the following figures:

Book value of assets	$ 900,000
Market value of assets	1,400,000
Market value of liabilities	550,000

Requirements

1. Journalize the entry to record Midland's purchase of Surety Wireless for $480,000 cash plus a $720,000 note payable.
2. What special asset does Midland's acquisition of Surety Wireless identify? How should Midland Telecom account for this asset after acquiring Surety Wireless? Explain in detail.

Learning Objectives 2, 3, 7
Appendix 9A

Jan. 1 Gain $8,000

P9A-41B Journalizing partial-year depreciation and asset disposals and exchanges

During 2016, Dora Company completed the following transactions:

Jan. 1	Traded in old office equipment with book value of $55,000 (cost of $124,000 and accumulated depreciation of $69,000) for new equipment. Dora also paid $100,000 in cash. Fair value of new equipment is $163,000. Assume the exchange had commercial substance.
Apr. 1	Sold equipment that cost $54,000 (accumulated depreciation of $42,000 through December 31 of the preceding year). Dora received $6,300 cash from the sale of the equipment. Depreciation is computed on a straight-line basis. The equipment has a five-year useful life and a residual value of $0.
Dec. 31	Recorded depreciation as follows: Office equipment is depreciated using the double-declining-balance method over four years with a $7,000 residual value.

Record the transactions in the journal of Dora Company.

> Continuing Problem

P9-42 Calculating and journalizing partial-year depreciation

This problem continues the Daniels Consulting situation from Problem P8-41 of Chapter 8. Assume Daniels Consulting had purchased a computer, $3,600, and office furniture, $3,000, on December 3 and 4, 2016, respectively, and that they were expected to last five years. Assume that both assets have a residual value of $0.

Requirements

1. Calculate the amount of depreciation expense for each asset for the year ended December 31, 2016, assuming the computer is depreciated using the straight-line method and the office furniture is depreciated using the double-declining-balance method.
2. Record the entry for the one month's depreciation.

CRITICAL THINKING

> Ethical Issue 9-1

Western Bank & Trust purchased land and a building for the lump sum of $3,000,000. To get the maximum tax deduction, Western allocated 90% of the purchase price to the building and only 10% to the land. A more realistic allocation would have been 70% to the building and 30% to the land.

Requirements

1. Explain the tax advantage of allocating too much to the building and too little to the land.
2. Was Western's allocation ethical? If so, state why. If not, why not? Identify who was harmed.

> Fraud Case 9-1

Jim Reed manages a fleet of utility trucks for a rural county government. He's been in his job for 30 years, and he knows where the angles are. He makes sure that when new trucks are purchased, the residual value is set as low as possible. Then, when they become fully depreciated, they are sold off by the county at residual value. Jim makes sure his buddies in the construction business are first in line for the bargain sales, and they make sure he gets a little something back. Recently, a new county commissioner was elected with vows to cut expenses for the taxpayers. Unlike other commissioners, this man has a business degree, and he is coming to visit Jim tomorrow.

Requirements

1. When a business sells a fully depreciated asset for its residual value, is a gain or loss recognized?
2. How do businesses determine what residual values to use for their various assets? Are there "hard and fast" rules for residual values?
3. How would an organization prevent the kind of fraud depicted here?

> Financial Statement Case 9-1

Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to **Starbucks Corporation's** Fiscal 2013 annual report. Refer to the Starbucks Corporation financial statements, including Notes 1 and 7. Answer the following questions.

Requirements

1. Which depreciation method does Starbucks Corporation use for reporting in the financial statements? What type of depreciation method does the company probably use for income tax purposes?
2. What was the amount of depreciation and amortization expense for the year ending September 29, 2013? (*Hint:* Review the Statement of Cash Flows.)
3. The statement of cash flows reports the cash purchases of property, plant, and equipment. How much were Starbucks's additions to property, plant, and equipment during the year ending 2013? Did Starbucks record any proceeds from the sale of property, plant, and equipment?

4. What was the amount of accumulated depreciation at September 29, 2013? What was the net book value of property, plant, and equipment for Starbucks as of September 29, 2013?
5. Compute Starbucks's asset turnover ratio for year ending September 29, 2013. How does Starbucks's ratio compare with that of **Green Mountain Coffee Roasters, Inc.**?

> Communication Activity 9-1

In 150 words or fewer, explain the different methods that can be used to calculate depreciation. Your explanation should include how to calculate depreciation expense using each method.

> Quick Check Answers

1. d **2.** d **3.** c **4.** b **5.** c **6.** d **7.** d **8.** b **9.** c **10A.** b

Investments

10

How Should the Business Invest Its Excess Cash?

Donavon Gill, portfolio manager for GMP Investors, had just finished a meeting with his newest client, Sarah Miller. Sarah is the CEO of Miller Construction, a profitable construction firm with offices throughout the United States. Sarah had requested a meeting with Donavon to discuss an investment plan for the business. Miller Construction was interested in investing its excess cash and, as CEO, Sarah had come to Donavon with a number of questions.

During the meeting, Donavon had shared with Sarah a variety of different investment options that the business could consider. One option might be for Miller Construction to invest in other corporations' stocks (called equity securities). Another option for the business might be investing in bonds (debt securities). He also talked to Sarah about why the business might want to invest in each type of security. Donavon knew that it was his responsibility to provide a custom solution for Miller Construction so that Sarah's business would meet its earnings needs.

Sarah was also interested in how Miller Construction would report these investments on its financial statements. She knew that investments in debt and equity securities were reported as assets on the balance sheet, but she was concerned that there might be some additional reporting requirements. Donavon was glad that Sarah was considering these issues and was happy to help her. He shared with her that the type of security (debt or equity) and the length of time the security was held (short-term versus long-term) determined how it was reported on the financial statements. Donavon also suggested that she talk to her company's accountant before deciding on the business's investment plan. He knew that there were a lot of issues to consider when choosing how to invest excess cash.

Why Would a Company Invest?

Many of you are familiar with the famous businessman Warren Buffett, but you might not know that he is the primary stockholder and CEO of Berkshire Hathaway, Inc. Berkshire Hathaway is a holding company that owns a large number of other businesses (called subsidiaries), including the popular automobile insurer GEICO and the railroad system operator Burlington Northern Santa Fe. In addition to owning subsidiaries, Berkshire Hathaway also invests cash in other corporations' stock, such as The Coca-Cola Company (9.1% ownership), Wal-Mart Stores, Inc. (1.8% ownership), and Exxon Mobil Corp. (0.9% ownership). Investing excess cash in corporations' stocks and bonds is a common practice; many businesses (and individuals) do this. In this chapter, you learn why companies might invest in securities and how these investments are reported on the financial statements.

Chapter 10 Learning Objectives

1 Identify why companies invest in debt and equity securities and classify investments

2 Account for investments in debt securities

3 Account for investments in equity securities

4 Describe and illustrate how debt and equity securities are reported

5 Use the rate of return on total assets to evaluate business performance

WHY DO COMPANIES INVEST?

Learning Objective 1
Identify why companies invest in debt and equity securities and classify investments

Just as individuals invest in a variety of companies' stocks and bonds, the same is true for businesses. Investments in stocks or bonds can range from a few securities to the acquisition of an entire company. In this chapter, we examine debt (bonds) and equity (stock) accounting for the investor who buys them.

Debt Securities Versus Equity Securities

The owner of a bond or stock of a corporation is referred to as the **investor**. The corporation that issued the bond or stock is referred to as the **investee**. For example, if you own shares of Smart Touch Learning's stock, you are the investor and Smart Touch Learning is the investee.

Investors can invest in either debt securities or equity securities. A **security** is a share or interest representing financial value. Securities are represented by a certificate (such as a stock certificate) and are commonly traded on an exchange (such as the New York Stock Exchange). A **debt security** represents a credit relationship with another company or governmental entity, and typically pays interest for a fixed period. Debt securities include U.S. government securities (Treasury bills), municipal bonds, and corporate bonds. An **equity security** represents stock ownership in another company and sometimes pays dividends. Equity securities include common and preferred stock.

Investor
The owner of a bond or stock of a corporation.

Investee
The corporation that issued the bond or stock to the investor.

Security
A share or interest representing financial value.

Debt Security
Represents a credit relationship with another company or governmental entity that typically pays interest for a fixed period.

Equity Security
Represents stock ownership in another company that sometimes pays dividends.

Reasons to Invest

Why would a company invest in debt or equity securities? Let's look at two common reasons:

1. The company may have short-term, excess cash that it doesn't need for normal operations. This excess cash could be the result of temporary or seasonal business fluctuations, or it could be cash available for a longer term. The company wants to make the best use of its excess cash, so it invests in debt or equity securities to generate investment income. This investment income may come from interest earned from debt investments, dividends earned from stock investments, and/or increases in the market value of the security.
2. The company may invest in debt or equity securities of other companies to pursue a certain business strategy. For example, a company may invest in a key vendor's debt or equity securities to further enhance a business relationship with that vendor. Doing so might strengthen the relationship between the investing company and the vendor.

Of course, there are other reasons a company may want to invest in other companies' debt or equity securities, but the reasons we identified above are the most common. Now, let's turn to a few basics of investing in debt or equity securities.

ETHICS

It's just a tip, isn't it?

Arlene Barry had just left the most recent board meeting of Panda Toy Manufacturing. Arlene served as chairman of the board and was also a majority stockholder in the business. Panda Toy Manufacturing had just learned that the company was being sued by a multinational retail toy store for failure to use flame-retardant filling in its stuffed panda bears. Arlene knew that the business had been cutting costs and had intentionally used filling that was not up to appropriate standards. She was sure that Panda Toy would lose the lawsuit and knew that the value of her stock would drop considerably. Arlene was considering quickly selling her stock before the lawsuit became public knowledge. What should Arlene do? What would you do?

Solution

If Arlene sells her investment in Panda Toy Manufacturing, she could be found guilty of illegal insider trading. Insider trading occurs when a corporate officer, director, or employee buys or sells stock after learning information obtained during the performance of the individual's duties that is considered to be nonpublic information about a company. If Arlene wants to sell her shares of Panda Toy, she should wait until after the information has become public. This type of sale would be considered legal insider trading and would need to be reported to the U.S. Securities and Exchange Commission (SEC) to notify the public of a change in ownership of the manufacturer's stock.

Classification and Reporting of Investments

Investments are first classified based on the length of time the investor intends to hold the investment. The two classifications are similar to the balance sheet classifications you learned previously.

- **Short-term investments**—sometimes called *marketable securities* or *temporary investments*—are current assets. Short-term investments are investments in debt and equity securities that are highly liquid (readily convertible to cash) and that the investor intends to convert to cash within one year.
- **Long-term investments** are all investments that are not short-term. Long-term investments include debt and equity securities that the investor expects to hold longer than one year or debt or equity securities that are not readily marketable—for instance, a stock investment in a small or privately held company that is not traded on any stock exchange.

Short-term Investments
Investments in debt and equity securities that are highly liquid and that the investor intends to sell in one year or less.

Long-term Investments
Investments in bonds (debt securities) or stocks (equity securities) in which the company intends to hold the investment for longer than one year.

Debt and equity securities can be further classified into five specific types.

- **Trading investments** are debt securities or equity securities in which the investor holds less than 20% of the voting stock and that the investor plans to sell in the very near future—days, weeks, or only a few months—with the intent of generating a profit on a quick sale. Trading investments are categorized as current assets.
- **Held-to-maturity (HTM) investments** are debt securities the investor intends to hold until they mature. Because equity securities don't "mature" on a specific date, this category of investment applies only to debt securities. Held-to-maturity investments are categorized as current assets or long-term assets on the balance sheet, depending on the maturity date.
- **Available-for-sale (AFS) investments** include all debt securities or equity securities in which the investor holds less than 20% of the voting stock and that aren't trading investments or held-to-maturity investments. In the case of debt securities, AFS investments are not planned to be held until maturity and are reported either as current assets or long-term assets on the balance sheet. AFS investments are reported as current assets if the business expects to sell them within one year. All other AFS investments that are planned to be held longer than a year are reported as long-term assets.

Trading Investment
A debt security or an equity security in which the investor holds less than 20% of the voting stock and that the investor plans to sell in the very near future.

Held-to-Maturity (HTM) Investment
A debt security the investor intends to hold until it matures.

Available-for-Sale (AFS) Investment
A debt security or an equity security in which the investor holds less than 20% of the voting stock and that isn't a trading investment or a held-to-maturity investment.

Significant Interest Investment An equity security in which the investor owns from 20% to 50% of the investee's voting stock.

Controlling Interest Investment An equity security in which the investor owns more than 50% of the investee's voting stock.

- **Significant interest investments** are equity securities in which the investor owns from 20% to 50% of the investee's voting stock. Significant interest investments are reported as long-term assets on the balance sheet.
- **Controlling interest investments** are equity securities in which the investor owns more than 50% of the investee's voting stock. Controlling interest investments are consolidated into the investor's financial statements, which is discussed later in the chapter.

Exhibit 10-1 summarizes the five types of investments.

Exhibit 10-1 | **Five Types of Investments**

Types of Investments	Debt, Equity, or Both	Definition
Trading Investments	Both	Securities in which the investor holds less than 20% of the investee's voting stock (if an equity security) and that the investor plans to sell in the very near future.
Held-to-Maturity Investments	Debt	Securities the investor intends to hold until they mature.
Available-for-Sale Investments	Both	Securities in which the investor holds less than 20% of the investee's voting stock (if an equity security) and that the investor does not plan to hold until they mature (if a debt security) or sell in the near future.
Significant Interest Investments	Equity	Securities in which an investor owns from 20% to 50% of the investee's voting stock.
Controlling Interest Investments	Equity	Securities in which an investor owns more than 50% of the investee's voting stock.

Try It!

Match the key term to the scenario.

1. Available-for-sale investments
2. Controlling interest investments
3. Trading investments
4. Held-to-maturity investments
5. Significant interest investments

a. Jane owns 53% of Richard's Roses's voting stock.

b. Joe owns a debt security in Bones, Inc. and intends to hold it until maturity.

c. Jeannie owns 18% of Cricket, Inc.'s voting stock and plans on selling the stock after one year.

d. Jacob owns 24% of Pay, Inc.'s voting stock.

e. Jim owns 10% of Tag, Inc.'s voting stock and plans on selling the stock next week.

Check your answers online in MyAccounting Lab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S10-1. MyAccountingLab

HOW ARE INVESTMENTS IN DEBT SECURITIES ACCOUNTED FOR?

Learning Objective 2
Account for investments in debt securities

Let's begin by discussing how debt securities are accounted for, including the purchase, interest revenue earned, and disposition of the securities.

Purchase of Debt Securities

Assume Smart Touch Learning has excess cash to invest and pays $100,000 to buy $100,000 face value, 9%, five-year Neon Company bonds on July 1, 2016. The bonds are issued on July 1, 2016. The bonds pay interest on June 30 and December 31. Smart Touch Learning intends to hold the bonds to maturity and will, therefore, record them as held-to-maturity investments. Smart Touch Learning's accounting clerk will record the investment in debt securities at cost, including any brokerage fees paid, with the following entry:

Date	Accounts and Explanation	Debit	Credit
2016			
Jul. 1	Long-term Investments—Held-to-Maturity	100,000	
	Cash		100,000
	Purchased investment in bonds.		

A↑↓ = **L** + **E**
LT Investments↑
Cash↓

Interest Revenue

On December 31, 2016, Smart Touch Learning would receive the first interest payment on the bond investment. Smart Touch Learning's entry to record the receipt of interest on December 31, 2016, is as follows:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Cash	4,500	
	Interest Revenue ($100,000 × 0.09 × 6/12)		4,500
	Received cash interest.		

A↑ = **L** + **E↑**
Cash↑
Interest Revenue↑

Smart Touch Learning would repeat this entry every six months for the five years—each time interest payments are received.

Disposition at Maturity

When Smart Touch Learning disposes of the bonds at maturity (June 30, 2021), it will receive the face value of the bond and record the following entry, assuming the last interest payment has been recorded:

Date	Accounts and Explanation	Debit	Credit
2021			
Jun. 30	Cash	100,000	
	Long-term Investments—Held-to-Maturity		100,000
	Disposed of bond at maturity.		

A↑↓ = **L** + **E**
Cash↑
LT Investments↓

In this example, we illustrated the accounting for held-to-maturity investments. Debt securities can also be trading investments and available-for-sale investments. The accounting for these is the same as illustrated above. The only difference is the use of a different account name. In addition, debt securities can be purchased at face value, at a discount, or at a premium. In our example, we purchased the debt securities at face value. If a debt security is purchased at a discount or at a premium, the discount/premium must be amortized when the interest revenue is earned. This amortization can be done using either the straight-line amortization method or the effective-interest amortization method and is similar to recording the amortization of discount or premium on bonds payable covered in a later chapter.

Try It!

6. On January 1, 2016, the College Corporation decides to invest in Small Town bonds. The bonds mature on December 31, 2020, and pay interest of 4% on June 30 and December 31. The market rate of interest was 4% on January 1, 2016, so the $20,000 maturity-value bonds sold for face value. College Corporation intends to hold the bonds until maturity. Journalize the transactions related to College Corporation's investment in Small Town bonds during 2016.

Check your answers online in MyAccounting Lab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S10-2. MyAccountingLab

HOW ARE INVESTMENTS IN EQUITY SECURITIES ACCOUNTED FOR?

Learning Objective 3
Account for investments in equity securities

The accounting for equity securities must be separated into three categories based on the percentage of ownership of the investor.

Equity Securities with Less Than 20% Ownership (Cost Method)

Equity securities in which the investor owns less than 20% ownership in the voting stock of the investee can be either trading investments or available-for-sale investments. Accounting for these types of equity securities is similar to accounting for debt securities. The main difference, though, is that equity securities earn *dividend* revenue instead of *interest* revenue. In the example below, we illustrate the accounting for available-for-sale investments. Trading investments would be recorded in a similar manner.

Purchase of Equity Securities

Assume Smart Touch Learning has excess cash to invest and buys 1,000 shares of stock in Yellow Corporation for $26.16 per share on March 1, 2016. Smart Touch Learning owns less than 20% of Yellow's voting stock and intends to hold the stock for two years. This is an available-for-sale investment, which Smart Touch Learning records as follows:

A↑↓	=	**L**	+	**E**
LT Investments↑ Cash↓				

Date	Accounts and Explanation	Debit	Credit
2016			
Mar. 1	Long-term Investments—Available-for-Sale ($26.16 per share × 1,000 shares)	26,160	
	Cash		26,160
	Purchased investment in stock.		

Dividend Revenue

Yellow Corporation declares and pays a cash dividend of $0.16 per share on June 9, 2016. Smart Touch Learning will receive the cash dividend on June 9 and record the entry as follows:

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 9	Cash	160	
	Dividend Revenue ($0.16 per share × 1,000 shares)		160
	Received cash dividend.		

A↑	=	L	+	E↑
Cash↑				Dividend Revenue↑

Disposition

Assume on July 15, 2016, Smart Touch Learning sells 800 shares of Yellow Stock for $25,000. Smart Touch Learning compares the cash received with the cost of the stock disposed of and determines the amount of gain or loss as follows:

Cash received	$ 25,000
Less: Cost of stock disposed of (800 shares × $26.16)	20,928
Gain or (Loss)	$ 4,072

Smart Touch Learning will then record the following journal entry:

Date	Accounts and Explanation	Debit	Credit
2016			
Jul. 15	Cash	25,000	
	Long-term Investments—Available-for-Sale		20,928
	Gain on Disposal		4,072
	Disposed of investment in stock.		

A↑	=	L	+	E↑
Cash↑ LT Investments↓				Gain on Disposal↑

Remember that Gain on Disposal is a temporary equity account and is reported in the Other Revenues and (Expenses) section of the income statement. If the company had sold the stock at a loss, the account Loss on Disposal would be recorded as a debit and also reported in the Other Revenues and (Expenses) section of the income statement.

Equity Securities with 20% to 50% Ownership (Equity Method)

When a company invests in equity securities with 20% to 50% ownership in the investee's voting stock, the investor can *significantly influence* the investee's decisions. This influence may be helpful if the investee's and investor's businesses are somehow related. These types of investments must be accounted for using the equity method.

Purchase

Investments accounted for by the equity method are recorded at cost at the time of purchase. Suppose Smart Touch Learning pays $400,000 to purchase 40% of the common stock of Kline, Inc. Smart Touch Learning then refers to Kline as an *affiliated company*. Smart Touch Learning's entry to record the purchase of this investment on January 6, 2016, follows:

A↑↓ = **L** + **E**
LT Investments↑
Cash↓

Date	Accounts and Explanation	Debit	Credit
2016			
Jan. 6	Long-term Investments—Kline, Inc.	400,000	
	Cash		400,000
	Purchased investment in stock (equity method).		

Dividends Received and Share of Net Income

When Smart Touch Learning receives cash dividends from Kline, it records its proportionate part of the cash dividends. Suppose that Kline declares and pays a cash dividend of $50,000 on June 30, 2016. Because Smart Touch Learning owns 40% of the stock, it receives 40%, or $20,000, of the dividend. Smart Touch Learning receives this dividend and makes the following journal entry:

A↑↓ = **L** + **E**
Cash↑
LT Investments↓

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 30	Cash ($40,000 × 0.40)	20,000	
	Long-term Investments—Kline, Inc.		20,000
	Received cash dividend (equity method).		

In using the equity method, when a dividend is received, why is the Long-term Investments account credited instead of Dividend Revenue?

The Long-term Investments account is credited for the receipt of a dividend because it decreases the investor's investment. In other words, the dividends are treated as if they were a return of capital rather than as earnings.

Under the equity method, the investor also must record annually its share of the investee's net income. The investor debits the Long-term Investments account and credits Revenue from Investments when the investee reports income. As Smart Touch Learning's equity in Kline increases, so does the Long-term Investments account on the investor's books.

Suppose Kline reported net income of $125,000 for the 2016 year. Smart Touch Learning would record 40% of this amount as an increase in the investment account, as follows:

A↑ = **L** + **E↑**
LT Investments↑ | Revenue from Investments↑

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Long-term Investments—Kline, Inc.	50,000	
	Revenue from Investments ($125,000 × 0.40)		50,000
	Recorded revenue earned from investment (equity method).		

After the preceding entries are posted, Smart Touch Learning's Long-term Investments T-account shows its equity in the net assets of Kline as follows:

Long-term Investments—Kline, Inc.

Jan. 6	400,000	20,000	Jun. 30
Dec. 31	50,000		
Bal.	430,000		

Smart Touch Learning would report the long-term investment on the balance sheet and the revenue from investments on the income statement.

Disposition

When Smart Touch Learning decides to sell its investment in Kline, Inc. it will need to determine whether there is a gain or loss. Suppose Smart Touch Learning sells 10% of the Kline common stock for $40,000 on January 1, 2017. Smart Touch Learning will calculate the gain or loss as follows and record the following journal entry:

Cash received	$ 40,000
Less: Book value on date of disposal ($430,000 × 0.10)	43,000
Gain or (Loss)	$ (3,000)

Date	Accounts and Explanation	Debit	Credit
2017			
Jan. 1	Cash	40,000	
	Loss on Disposal	3,000	
	Long-term Investments—Kline, Inc.		43,000
	Disposed of part of investment in stock (equity method).		

A↓ = **L** + **E↓**

Cash↑ Loss on Disposal↑

LT Investments↓

DECISIONS

Should the business purchase more stock?

Bath Corporation currently owns 15% of Body Co. Bath has the opportunity to purchase additional shares of stock in Body Co., which would bring Bath's ownership percentage to 25%. Bath Corporation is considering the investment because the purchase would allow Bath Corporation to have some influence over Body, but Bath is not sure about the accounting implications. What should Bath do?

Solution

If Bath Corporation purchases the additional shares of stock in Body Co., the business will now own from 20% to 50% of Body Co. This is considered significant influence and changes the way the Bath Corporation must account for the investment. If the Bath Corporation investment remains at 15%, the business would record the investment at cost. Any dividends earned would be recorded as dividend revenue. However, if Bath Corporation purchases the additional shares in Body Co., the business would account for the investment using the equity method. The investment would still be recorded initially at cost, but any dividends received would decrease the value of the investment. Also, Bath Corporation would be required to report its share (25%) of Body Co.'s earnings as revenue. Bath Corporation should consider whether the influence gained is worth the additional recording requirements.

Equity Securities with More Than 50% Ownership (Consolidations)

Parent Company
A company that owns a controlling interest in another company.

Subsidiary Company
A company that is controlled by another corporation.

Consolidation Accounting
The way to combine the financial statements of two or more companies that have the same owners.

Consolidated Statements
Financial statements that combine the balance sheets, income statements, and statements of cash flow of the parent company with those of its controlling interest affiliates.

Many large corporations own controlling interests in other companies. An investor owns a controlling interest when the investor owns more than 50% of the investee's voting stock. This type of investment enables the investor to elect a majority of the board of directors and thereby control the investee. The corporation that controls the other company is called the **parent company**, and the company that is controlled by another corporation is called the **subsidiary company**.

In equity securities with more than 50% ownership, the parent usually prepares consolidated financial statements. **Consolidation accounting** is the way to combine the financial statements of two or more companies that have the same owners. Many published financial reports include consolidated statements. **Consolidated statements** combine the financial statements (such as the balance sheets, income statements, and statements of cash flow) of the parent company with those of its controlling interest affiliates. The final outcome is a single set of statements, as if the parent and its subsidiaries were the same entity. This topic is covered in advanced accounting courses.

Try It!

7. On May 15, 2016, Mayer Co. invests $8,000 in John, Inc. stock. John pays Mayer a $200 dividend on November 15, 2016. Mayer sells the John stock on December 10, 2016, for $7,500. Assume the investment is categorized as long-term available-for-sale. Journalize the 2016 transactions related to Mayer's investment in John stock.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S10-3 and S10-4. MyAccountingLab

HOW ARE DEBT AND EQUITY SECURITIES REPORTED?

Learning Objective 4
Describe and illustrate how debt and equity securities are reported

Corporations' debt and equity securities are reported on the balance sheet in either the current or the long-term asset section. How they are reported, though, depends upon the type of investment and ownership percentage.

Trading Investments

Fair Value
The price that would be used if the investments were sold on the market.

Trading investments, those that the investor plans to sell in the very near future, are initially recorded at cost. At the end of each period, though, trading securities must be adjusted and reported at fair value. **Fair value** is the price that would be used if the company were to sell the investments on the market. The company will make a year-end adjustment of the trading investment to bring the account to market value. This adjustment is recorded as an unrealized holding gain or loss and is reported in the Other Revenues and (Expenses) section of the income statement.

It's important to note the distinction between unrealized and realized gains or losses. Unrealized gains or losses occur when a company adjusts an asset to fair value but has not yet disposed of the asset. Realized gains or losses occur when a company disposes of an asset and represents the difference between the cash received at time of disposal and the basis of the asset.

Suppose that on December 31, 2016, Smart Touch Learning reported trading investments of $26,160. After careful evaluation, Smart Touch Learning concluded that the market value of the trading investments had decreased to $24,000. The company has an unrealized loss of $2,160 on the investments ($24,000 − $26,160). At year-end, Smart Touch Learning would record the following adjusting entry:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Unrealized Holding Loss—Trading	2,160	
	Fair Value Adjustment —Trading		2,160
	Adjusted trading investments to market value.		

A↓	=	**L**	+	**E↓**
Fair Value Adjustment↓				Unrealized Holding Loss↑

After the adjustment, the investment T-accounts would appear as follows:

Short-term Investments—Trading	
Bal. 26,160	

Fair Value Adjustment—Trading	
	2,160 Dec. 31

$26,160 − $2,160 = $24,000

In this case, the Fair Value Adjustment account is considered a contra account and is subtracted from the Short-term Investments account to determine carrying value when it has a credit balance. If the account has a debit balance, it is considered an adjunct account and is added to the Short-term Investments account to determine carrying value.

The combined T-accounts show the $24,000 balance for trading investments. Smart Touch Learning would report its trading investments on the balance sheet at $24,000 at December 31, 2016, and the $2,160 unrealized holding loss on the trading investments on the 2016 income statement as follows:

SMART TOUCH LEARNING
Balance Sheet (Partial)
December 31, 2016

Current Assets:	
Short-term Investments—Trading (at fair value; cost $26,160)	$ 24,000

SMART TOUCH LEARNING
Income Statement (Partial)
For the Year Ended December 31, 2016

Other Revenues and (Expenses):	
Unrealized Holding Loss—Trading	$ (2,160)

Disposition

When a trading security is disposed, the fair value adjustment is ignored in determining the calculation of the gain or loss. The disposition is handled as we have shown earlier in the chapter. The amount of gain or loss is calculated as the difference between the cash received and the cost of the stock disposed. At the end of the year, the company would evaluate their remaining trading security investments and make a year-end adjustment to current market value.

Available-for-Sale Investments

Available-for-sale (AFS) investments are reported as *current assets* on the balance sheet if the business expects to sell them within one year. All other AFS investments that are planned to be held longer than a year are reported as *long-term assets* on the balance sheet. The fair value method is also used to account for AFS investments because they are normally sold in the near future at their current market value.

AFS investments are reported on the balance sheet at current market value. This requires a year-end adjustment of the AFS investment to current market value, much like the treatment of trading investments. However, the unrealized holding gains and losses on AFS investments are not reported on the income statement. They are recorded as an adjustment to the Unrealized Holding Gain—Available-for-Sale account or Unrealized Holding Loss—Available-for-Sale account, which is included in Other Comprehensive Income on the Statement of Comprehensive Income and as a component of Accumulated Other Comprehensive Income in the stockholders' equity section of the balance sheet. Assume on December 31, 2016, Smart Touch Learning reported long-term available-for-sale investments of $60,000. After careful review, the company determines the market value of the AFS investments has increased to $64,000. Smart Touch Learning has an unrealized holding gain of $4,000 on the investment ($64,000 market value minus $60,000 purchase price). At year-end, Smart Touch Learning would make the following adjustment:

A↑	=	**L**	+	**E↑**
Fair Value Adjustment↑				Unrealized Holding Gain↑

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Fair Value Adjustment—Available-for-Sale	4,000	
	Unrealized Holding Gain—Available-for-Sale		4,000
	Adjusted available-for-sale investments to market value.		

After posting the December 31, 2016, adjustment, the investment T-accounts would appear as follows:

Long-term Investments—AFS		
Bal.	60,000	

Fair Value Adjustment—AFS		
Dec. 31	4,000	

$60,000 + $4,000 = $64,000

The combined T-accounts show the $64,000 balance for the AFS investments. Smart Touch Learning would report the investment on the balance sheet at $64,000 at December 31, 2016. The $4,000 Unrealized Holding Gain—Available-for-Sale would be reported in the stockholders' equity section of the balance sheet as Accumulated Other Comprehensive Income as shown here:

SMART TOUCH LEARNING
Balance Sheet (Partial)
December 31, 2016

Assets	
Long-term Assets:	
Long-term Investments—AFS (at fair value; cost $60,000)	$ 64,000
Stockholders' Equity	
Accumulated Other Comprehensive Income:	
Unrealized Holding Gain—AFS	$ 4,000

It's important to remember that unrealized holding gains or losses on available-for-sale investments are not included in net income. Instead, they are included as other comprehensive income, which are adjustments to net income to determine comprehensive income. **Comprehensive income** is the company's change in total stockholders' equity from all sources other than owners' investments and dividends. Comprehensive income includes net income plus some specific gains and losses, as follows:

Comprehensive Income
A company's change in total stockholders' equity from all sources other than owners' investments and dividends.

- Unrealized holding gains or losses on *available-for-sale investments*
- Foreign currency translation adjustments
- Gains or losses from post-retirement benefit plans
- Deferred gains or losses from derivatives

The calculation of these items is explained in advanced accounting courses. For now, you need to know that these items do not enter into the determination of net income but, instead, are reported as other comprehensive income.

Comprehensive income can be reported one of two ways: as a second income statement or combined with a traditional income statement into a combined statement of comprehensive income. An example of how comprehensive income can be reported is shown in Exhibit 10-2.

Exhibit 10-2 | **Comprehensive Income**

SMART TOUCH LEARNING
Comprehensive Income Statement
For the Year Ended December 31, 2016

Net Income	$ 100,000
Other Comprehensive Income:	
Unrealized Holding Gain—AFS	4,000
Comprehensive Income	$ 104,000

Disposition

It is important to note that disposition of available-for-sale investments is handled in the same manner as trading securities. Any prior period fair value adjustment is ignored when calculating the amount of the gain or loss. The gain or loss is determined as the difference between the amount received and the cost of the investment. At the end of the year, the company would evaluate their remaining available-for-sale investments and make a year-end adjustment to current market value.

Held-to-Maturity Investments

Held-to-maturity (HTM) investments are normally reported at amortized cost, which is explained in advanced accounting courses. Depending on the maturity date, the HTM investment will be reported as a current asset or a long-term asset on the balance sheet. When the maturity date is within one year of the balance sheet date, the HTM investment is reported as a current asset; otherwise, the asset is reported as long-term. Interest revenue earned on HTM investments is reported on the income statement in the Other Revenues and (Expenses) section.

Exhibit 10-3 summarizes the accounting methods for debt and equity securities and also the financial statement effects.

Exhibit 10-3 | **Debt and Equity Securities—Accounting Methods and Financial Statement Effects**

Types of Investments	Accounting Methods	Financial Statement Effects	
		Balance Sheet	Income Statement
Trading Investments	Fair Value: Unrealized Holding Gain or Loss is included in net income.	The investment is reported as a current asset on the balance sheet.	Dividend or interest revenue is reported on the income statement.
Held-to-Maturity Investments	Amortized Cost	Depending on the maturity date, the investment is reported as a current or long-term asset on the balance sheet.	Interest revenue is reported on the income statement.
Available-for-Sale Investments	Fair Value: Unrealized Holding Gain or Loss is included in Other Comprehensive Income and reported as a separate component of stockholders' equity.	The investment is reported as a current or long-term asset on the balance sheet depending on management's intent.	Dividend or interest revenue is reported on the income statement.
Significant Interest Investments	Equity	The investment is reported as a long-term asset on the balance sheet.	A percentage share of investee's net income is reported on the income statement.
Controlling Interest Investments	Consolidation	The balance sheets of the parent and subsidiary are combined.	The income statements of the parent and subsidiary are combined.

Try It!

8. On August 20, 2016, Mraz, Co. decides to invest excess cash of $2,500 by purchasing 500 shares of Virginia, Inc. stock at $5 per share. At year-end, December 31, 2016, Virginia's market price was $4 per share. The investment is categorized as available-for-sale. Journalize the adjusting entry needed at December 31, 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S10-5 and S10-6. MyAccountingLab

HOW DO WE USE THE RATE OF RETURN ON TOTAL ASSETS TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 5

Use the rate of return on total assets to evaluate business performance

Rate of Return on Total Assets

A ratio that measures the success a company has in using its assets to earn income. (Net income + Interest expense) / Average total assets.

The **rate of return on total assets**, or simply return on assets, measures a company's success in using assets to earn a profit. There are two ways that a company can finance its assets:

- Debt—A company can borrow money from creditors to purchase assets. Creditors earn interest on the money that is loaned.
- Equity—A company may receive cash or other assets from stockholders. Stockholders invest in the company and hope to receive a return on their investment.

Rate of return on total assets is calculated by adding interest expense to net income and dividing by average total assets. Interest expense is added back to net income to determine the real return on the assets regardless of the corporation's financing choices (debt or equity).

Using **Green Mountain Coffee Roasters, Inc.'s** Fiscal 2013 Annual Report, we can determine its rate of return on total assets. Net income and interest expense are taken from the company's income statement, and total assets is taken from the balance sheet as follows (in thousands):

Total Assets, September 28, 2013	$ 3,761,548
Total Assets, September 29, 2012	3,615,789
For Year Ended September 28, 2013:	
Interest Expense	18,177
Net Income	483,232

The rate of return on total assets is calculated as:

Rate of return on total assets = (Net income + Interest expense) / Average total assets
= ($483,232 + $18,177) / [($3,761,548 + $3,615,789) / 2]
= 0.14 = 14%

Green Mountain Coffee Roasters, Inc. has a rate of return on total assets of 14%, which means that for each $1.00 invested in the company's average assets, the company earned $0.14 in profits before considering interest expense. What is a good rate of return on total assets? There is no single answer because rates of return vary widely by industry. Suppose that for the coffee and tea manufacturing industry, an 8% rate of return on total assets is considered good. In that case, Green Mountain's 14% return on assets would be considered very good because it is well above the industry average.

Try It!

9. Lee Co. reported the following items on its 2016 financial statements:

Total Assets, December 31, 2016	$ 10,000
Total Assets, December 31, 2015	15,000
For Year Ended December 31, 2016:	
Interest Expense	150
Net Income	850

Determine Lee's rate of return on total assets for 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S10-7. MyAccountingLab

REVIEW

> Things You Should Know

1. Why do companies invest?

- Companies invest in debt or equity securities to generate investment income or to pursue a certain business strategy.
- A debt security represents a credit relationship with another company or governmental entity, and typically pays interest for a fixed period.
- An equity security represents stock ownership in another company and sometimes pays dividends.
- Investments are classified as either short-term or long-term investments and can be further classified into five categories:
  - Trading investments—debt securities or equity securities in which the investor holds less than 20% of the voting stock and that the investor plans to sell in the very near future
  - Held-to-maturity (HTM) investments—debt securities the investor intends to hold until they mature
  - Available-for-sale (AFS) investments—debt securities or equity securities in which the investor holds less than 20% of the voting stock and that aren't trading investments or held-to-maturity investments
  - Significant interest investments—equity securities in which the investor owns 20% to 50% of the investee's voting stock
  - Controlling interest investments—equity securities in which the investor owns more than 50% of the investee's voting stock

2. How are investments in debt securities accounted for?

- Investments in debt securities are recorded at cost, including any brokerage fees paid.
- The receipt of interest revenue is recorded with a debit to Cash and a credit to Interest Revenue.
- Debt securities disposed of at maturity are recorded with a debit to Cash and a credit to the Short-term or Long-term Investments account.

3. How are investments in equity securities accounted for?

- Equity securities with less than 20% ownership are recorded using the cost method.
  - The purchase of equity securities is recorded at cost, including any brokerage fees paid.
  - The receipt of dividend revenue is recorded with a debit to Cash and a credit to Dividend Revenue.
  - Equity securities disposed of could involve either a gain or loss on disposal.
- Equity securities with 20% to 50% ownership are recorded using the equity method.
  - The purchase of the equity securities is recorded at cost.
  - Dividends declared and received are recorded with a debit to Cash and a credit to Long-term Investments. A dividend reduces the investor's investment.
  - The investor's share of net income is recorded as a debit to Long-term Investments and a credit to Revenue from Investments. Net income increases the investor's investment.
  - Disposition of equity securities could involve either a gain or loss.
- Equity securities with more than 50% ownership are recorded using the consolidation method, which involves the parent company preparing consolidated statements.

4. How are debt and equity securities reported?

- Trading investments and available-for-sale investments are reported at fair value on the balance sheet.
  - The unrealized holding gain or loss incurred on trading investments is reported on the income statement as Other Revenues and (Expenses).
  - The unrealized holding gain or loss incurred on available-for-sale investments is not included in net income. It is, instead, reported as part of accumulated other comprehensive income included in stockholders' equity on the balance sheet.
- Held-to-maturity investments are reported at amortized cost on the balance sheet.

5. How do we use the rate of return on total assets to evaluate business performance?

- The rate of return on total assets measures a company's success in using its assets to earn a profit.
- (Net income + Interest expense) / Average total assets.

> Summary Problem 10-1

Requirements

1. Identify the appropriate accounting method for each of the following situations:
   - **a.** Investment in 25% of the investee company's stock
   - **b.** Available-for-sale investment in stock
   - **c.** Investment in more than 50% of the investee company's stock
   - **d.** Bond investment that matures in four years. The investor plans to hold the bond for the full four years.
2. At what amount should the following trading investment portfolio be reported on the December 31, 2016, balance sheet? All the investments represent a 5% investment in the investee's stock.

Stock	Investment Cost	Current Market Value
Purple	$ 5,000	$ 5,500
Yellow	61,200	53,000
Black	3,680	6,230
Totals	$ 69,880	$ 64,730

Journalize any adjusting entry required on December 31.

3. An investor paid $67,900 on January 1, 2016, to acquire 40% of Finn-Girl, Inc.'s outstanding common stock. During the first year, Finn-Girl's net income was $80,000, and on June 14, the company declared and paid cash dividends of $55,000 to all stockholders. Journalize the investor's transactions related to the Finn-Girl investment: (a) purchase of the investment, (b) receipt of dividends, (c) investor's share of net income, and (d) sale of Finn-Girl stock for $80,100 on January 3, 2017.

> Solutions

Requirement 1

a. Equity

b. Fair value

c. Consolidation

d. Amortized cost

Requirement 2

The trading investments should be reported at market value, $64,730, on the balance sheet. The adjusting entry required to report the investments at fair value is as follows:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Unrealized Holding Loss—Trading ($64,730 − $69,880)	5,150	
	Fair Value Adjustment—Trading		5,150
	Adjusted trading investments to market value.		

The Unrealized Holding Loss—Trading would be reported as an Other Revenues and (Expenses) item on the income statement.

Requirement 3

Date	Accounts and Explanation	Debit	Credit
2016			
(a) Jan. 1	Long-term Investments—Finn-Girl, Inc.	67,900	
	Cash		67,900
	Purchased investment in stock (equity method).		
(b) Jun. 14	Cash	22,000	
	Long-term Investments—Finn-Girl, Inc. ($55,000 × 0.40)		22,000
	Received cash dividends (equity method).		
(c) Dec. 31	Long-term Investments—Finn-Girl, Inc.	32,000	
	Revenue from Investments ($80,000 × 0.40)		32,000
	Recorded revenue earned from investment (equity method).		
2017			
(d) Jan. 3	Cash	80,100	
	Long-term Investments—Finn-Girl, Inc.		77,900
	Gain on Disposal		2,200
	Disposed of investment in stock (equity method).		

Calculations for disposal:

Long-term Investments—Finn-Girl, Inc.

Jan. 1	67,900	22,000	Jun. 14
Dec. 31	32,000		
Bal.	77,900		

Cash received	$ 80,100
Less: Book value of stock disposed of	77,900
Gain or (Loss)	$ 2,200

> Key Terms

Available-for-Sale (AFS) Investment (p. 549)
Comprehensive Income (p. 559)
Consolidated Statements (p. 556)
Consolidation Accounting (p. 556)
Controlling Interest Investment (p. 550)
Debt Security (p. 548)
Equity Security (p. 548)
Fair Value (p. 556)
Held-to-Maturity (HTM) Investment (p. 549)
Investee (p. 548)
Investor (p. 548)
Long-term Investments (p. 549)
Parent Company (p. 556)
Rate of Return on Total Assets (p. 561)
Security (p. 548)
Short-term Investments (p. 549)
Significant Interest Investment (p. 550)
Subsidiary Company (p. 556)
Trading Investment (p. 549)

> Quick Check

Learning Objective 1

1. Assume Intervale Railway is considering investing in Pale Co. stock for three months. The investment will represent 5% of the voting stock of Pale Co. How would the investment be classified?
   - **a.** Significant interest investment
   - **b.** Trading investment
   - **c.** Held-to-maturity investment
   - **d.** Controlling interest investment

Learning Objective 1

2. Which of the following investments is most likely classified as a held-to-maturity investment?
   - **a.** 80% stock ownership in a subsidiary
   - **b.** 100% ownership in voting stock of a supplier
   - **c.** 10-year bonds
   - **d.** None of the above

Learning Objective 2

3. If Intervale Railway invests $100,000 in 5% bonds at face value that the company intends to hold until the bond maturity date, the interest revenue recognized when each semiannual interest payment is received would be recorded as a
   - **a.** credit to Cash, $2,500.
   - **b.** credit to Interest Revenue, $2,500.
   - **c.** debit to Long-term Investments—Held-to-Maturity, $2,500.
   - **d.** debit to Dividend Revenue, $2,500.

Learning Objective 3

4. A company invested $45,000 in Yale Co. stock. The investment represented 5% of the voting stock of Yale Co. If the Yale Co. stock investment paid dividends, what account would be credited?
   - **a.** Long-term Investments—Available-for-Sale
   - **b.** Interest Revenue
   - **c.** Dividend Revenue
   - **d.** Cash

Learning Objective 3

5. If a company owns 25% of the voting stock of Pink Co., dividends received will be
   - **a.** credited to Long-term Investments—Pink Co.
   - **b.** credited to Dividend Revenue.
   - **c.** debited to Long-term Investments—Pink Co.
   - **d.** credited to Cash.

Learning Objective 3

6. Best Appliances owns 90% of the voting stock of Wratchet, Inc. Which of the following is true?
   - **a.** The financial statements of Best would be consolidated into Wratchet.
   - **b.** Wratchet would be considered the parent entity.
   - **c.** Best would be considered the parent entity.
   - **d.** Both a and c are correct.

Learning Objective 4

7. Yale Co. purchased an available-for-sale stock investment on October 4 of the current year for $45,000. The market value of the stock investment at year-end is $42,000. What value will be reported in net income for the adjustment, if any?

   a. $42,000
   b. $0
   c. $(3,000)
   d. Not enough information is given to determine the amount included in net income.

Learning Objective 4

8. Harvard Co. purchased a trading investment on December 1 of the current year for $30,000. The market value of the stock investment at year-end is $36,000. What value will be reported in net income for the adjustment, if any?

   a. $36,000
   b. $(6,000)
   c. $6,000
   d. $30,000

Learning Objective 4

9. Bendi Corp. purchased 1,000 shares of Kala Corp. for $16 per share. The investment represents 5% ownership, and Bendi holds the investment as an available-for-sale investment. The fair value at year-end is $15 per share. Assuming no other transactions occurred where would the $1 per share difference be reported on the year-end financial statements?

   a. Retained Earnings
   b. Other Comprehensive Income
   c. Unrealized Holding Gain—AFS
   d. Both b and c are correct.

Learning Objective 5

10. Panjab Company reported the following information on its financial statements

Total Assets, December 31, 2016	$ 400,000
Total Assets, December 31, 2017	440,000
For Year Ended December 31, 2017:	
Interest Expense	2,000
Net Income	40,000

What is Panjab's rate of return on total assets?

   a. 10.0%
   b. 9.5%
   c. 10.5%
   d. None of the above

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is a debt security?
2. What is an equity security?
3. Why would a company invest in debt or equity securities?
4. Briefly describe the five specific types of debt and equity securities.
5. How is the purchase of a held-to-maturity debt security at face value recorded?
6. When disposing of an available-for-sale investment, where is the gain or loss on disposal reported in the financial statements?
7. What method is used for investments in equity securities with 20% to 50% ownership? Briefly describe how dividends declared and received and share of net income are reported.
8. What method is used for investments in equity securities with more than 50% ownership? Briefly describe this method.
9. What adjustment must be made at the end of the period for trading investments and available-for-sale investments?
10. Where on the financial statements is an unrealized holding gain or loss on trading investments reported?
11. Where on the financial statements is an unrealized holding gain or loss on available-for-sale investments reported?
12. What is comprehensive income, and what does it include?
13. How are held-to-maturity investments reported on the financial statements?
14. What does the rate of return on total assets measure, and how is it calculated?

> Short Exercises

Learning Objective 1

S10-1 Identifying why companies invest and classifying investments

Garden Haven has excess cash of $15,000 at the end of the harvesting season. Garden Haven will need this cash in four months for normal operations.

Requirements

1. What are some reasons why Garden Haven may choose to invest in debt or equity securities?
2. What type of classification would Garden Haven's investment fall within—short-term or long-term? Why?

Learning Objective 2

S10-2 Accounting for held-to-maturity investments

On January 1, 2016, the Chefs Restaurant Requirements decides to invest in Lake Myrth bonds. The bonds mature on December 31, 2022, and pay interest on June 30 and December 31 at 5% annually. The market rate of interest was 5% on January 1, 2016, so the $50,000 maturity value bonds sold for face value. Chefs intends to hold the bonds until December 31, 2022.

Requirements

1. Journalize the transactions related to Chefs investment in Lake Myrth bonds during 2016.
2. In what category would Chef's report the investment on the December 31, 2016, balance sheet?

Learning Objective 3

S10-3 Accounting for trading investments

On January 1, 2016, Bark Company invests $11,000 in Iris, Inc. stock. Iris pays Bark a $200 dividend on July 1, 2016. Bark sells the Iris's stock on July 31, 2016, for $11,600. Assume the investment is categorized as a trading investment.

Requirements

1. Journalize the transactions for Bark's investment in Iris's stock.
2. What was the net effect of the investment on Bark's net income for the year ended December 31, 2016?

Learning Objective 3

S10-4 Accounting for equity method

On January 1, 2016, Rusty, Inc. decides to Requirements invest in 12,250 shares of Dressage stock when the stock is selling for $12 per share. On July 1, 2016, Dressage paid a $1.00 per share cash dividend to stockholders. On December 31, 2016, Dressage reports net income of $50,000 for 2016. Assume Dressage has 35,000 shares of voting stock outstanding during 2016.

Requirements

1. Identify what type of investment the Dressage stock is for Rusty.
2. Journalize the transactions related to Rusty's investment in the Dressage stock during 2016.
3. In what category and at what value would Rusty's report the investment on the December 31, 2016, balance sheet?

Learning Objectives 3, 4

S10-5 Accounting for trading investments

On February 1, 2016, Mill Co. decides to invest excess cash of $27,300 by purchasing 1,300 shares of Grant, Inc. stock at $21 per share. At year-end, December 31, 2016, Grant's market price was $34 per share. The investment is categorized as a trading investment.

Requirements

1. Journalize the transactions for Mill's investment in Grant, Inc. for 2016.
2. In what category and at what value would Mill report the asset on the December 31, 2016, balance sheet? In what account would the market price change in Grant's stock be reported, if at all?
3. What was the net effect of the investment on Mill's net income for the year ended December 31, 2016?

Learning Objectives 3, 4

S10-6 Accounting for available-for-sale investments

On July 1, 2016, Bella's Restaurant decides to invest excess cash of $51,200 from the tourist season by purchasing 3,200 shares of Wolf, Inc. stock at $16 per share. At year-end, December 31, 2016, Wolfs market price was $15 per share. The investment is categorized as an available-for-sale investment and will be held for the short-term.

Requirements

1. Journalize the transactions for Bella's investment in Wolf, Inc. for 2016.
2. In what category and at what value would Bella report the asset on the December 31, 2016, balance sheet? In what account would the market price change in Wolf's stock be reported, if at all?
3. What was the net effect of the investment on Bella's net income for the year ended December 31, 2016?

Learning Objective 5

S10-7 Computing rate of return on total assets

Parvin's 2016 financial statements reported the following items—with 2015 figures given for comparison:

PARVIN, INC.
Balance Sheet
As of December 31, 2016 and 2015

	2016	2015
Total Assets	**$ 30,778**	**$ 34,410**
Total Liabilities	17,200	19,610
Total Stockholders' Equity (all common)	13,578	14,800
Total Liabilities and Stockholders' Equity	**$ 30,778**	**$ 34,410**

Net income for 2016 was $4,590, and interest expense was $210. Compute Parvin's rate of return on total assets for 2016. (Round to the nearest percent.)

> Exercises

Learning Objective 2

1. Jun. 30 Int. Rev. CR $2,250

E10-8 Accounting for bond investments

Graham purchased a bond on January 1, 2016, for $140,000. The bond has a face value of $140,000 and matures in 15 years. The bond pays interest on June 30 and December 31 at a 6% annual rate. Graham plans on holding the investment until maturity.

Requirements

1. Journalize the 2016 transactions related to Graham's bond investment. Explanations are not required.
2. Journalize the transaction related to Graham's disposition of the bond at maturity. Determine the date. (Assume the last interest payment has already been recorded.) Explanations are not required.

Learning Objective 2

2. $32,000

E10-9 Accounting for bond investments

Astra Mile & Co. owns vast amounts of Requirements corporate bonds. Suppose Astra Mile buys $1,000,000 of BloomCo bonds at face value on January 2, 2016. The BloomCo bonds pay interest at the annual rate of 6% on June 30 and December 31 and mature on December 31, 2035. Astra Mile intends to hold the investment until maturity.

Requirements

1. Journalize any required 2016 entries for the bond investment.
2. How much cash interest will Astra Mile receive each year from BloomCo?
3. How much interest revenue will Astra Mile report during 2016 on this bond investment?

E10-10 Accounting for bond investments

Learning Objective 2

2a. Int. Rev. CR $18,000

League Up & Co. owns vast amounts of corporate bonds. Suppose League Up buys $700,000 of CoteCorp bonds at face value on January 2, 2016. The CoteCorp bonds pay interest at the annual rate of 8% on June 30 and December 31 and mature on December 31, 2030. League Up intends to hold the investment until maturity.

Requirements

1. How would the bond investment be classified on League Up's December 31, 2016, balance sheet?
2. Journalize the following on League Up's books:
    a. Receipt of final interest payment on December 31, 2030
    b. Disposal of the investment at maturity on December 31, 2030

E10-11 Accounting for stock investments

Learning Objectives 3, 4

1. Dec. 31 Unrealized Holding Loss—AFS DR $1,000

Strategic Investments completed these long-term, available-for-sale investment transactions during 2016:

Jan. 14	Purchased 900 shares of Velcon stock, paying $54 per share. The investment represents 4% ownership in Velcon's voting stock. Strategic intends to hold the investment for the indefinite future.
Aug. 22	Received a cash dividend of $0.57 per share on the Velcon stock.
Dec. 31	Adjusted the investment to its current market value of $50 per share.
31	Velcon reported net income of $420,000 for the year ended 2016.

Requirements

1. Journalize Strategic's investment transactions. Explanations are not required.
2. Classify and prepare partial financial statements for Strategic's Velcon investment as of December 31, 2016. Assume Strategic Investment's net income for the year is $90,000.

E10-12 Accounting for stock investments

Learning Objectives 3, 4

2. Long-term Investments—AFS CR $37,600

Know All Investments completed the following long-term, available-for-sale investment transactions during 2016:

Jan. 14	Purchased 400 shares of Microscape stock, paying $43 per share. The investment represent 4% ownership in Microscape's voting stock. Know All intends to hold the investment for their indefinite future.
Aug. 22	Received a cash dividend of $0.27 per share on the Microscape stock.
Dec. 31	Adjusted the Microscape investment to its current market value of $38.

On August 4, 2017, Know All Investments sold its investment in Microscape stock for $40 per share.

Requirements

1. Journalize the entries for 2016. Explanations are not required.
2. Journalize the sale that occurred in 2017. Explanations are not required.
3. What account(s) and amount(s), if any, would be reported on Know All's income statement for the year ended December 31, 2017?

Learning Objective 3

1. Revenue from Investments CR $82,500

E10-13 Accounting for stock investments

Dollar Bill Investments completed the following transactions during 2016:

Jan. 14	Purchased 600 shares of Neutron stock, paying $48 per share. The investment represent 455 ownership in Neutron's voting stock. Dollar Bill intends to hold the investment for the indefinite
Aug. 22	Received a cash dividend of $0.66 per share on the Neutron stock.
Dec. 31	Neutron's current market value is $43 per share.
31	Neutron reported net income of $250,000 for the year ended 2016.

Requirements

1. Journalize Dollar Bill's transactions. Explanations are not required.
2. Classify and prepare partial financial statements for Dollar Bill's 45% Neutron investment for the year ended December 31, 2016.

Learning Objective 3

3. $358,000,000 Bal.

E10-14 Accounting for stock investments

Suppose that on January 6, 2016, Southeast Motors paid $450,000,000 for its 25% investment in Torque Motors. Assume Torque earned net income of $80,000,000 and paid cash dividends of $45,000,000 to all outstanding stockholders during 2016. (Assume all outstanding stock is voting stock.)

Requirements

1. What method should Southeast Motors use to account for the investment in Torque Motors? Give your reasoning.
2. Journalize all required 2016 transactions related to Southeast Motors's Torque investment. Include an explanation for each entry.
3. Post all 2016 transactions to the investment T-account. What is its balance after all the transactions are posted? How would this balance be classified on the balance sheet dated December 31, 2016?

Learning Objectives 1, 3, 4

1. Dec. 31 Fair Value Adjustment—Trading CR $1,100

E10-15 Classifying and accounting for stock investments

Manchester Today Publishers completed the following trading investment transactions during 2016 and 2017:

2016	
Dec. 6	Purchased 950 shares of Fully stock at a price of $31.00 per share, intending to sell the investment next month.
23	Received a cash dividend of $1.20 per share on the Fully stock.
31	Adjusted the investment to its market value of $18.00 per share.
2017	
Jan. 27	Sold the Fully stock for $24.40 per share.

Requirements

1. Journalize Manchester Today's investment transactions. Explanations are not required.
2. On December 31, 2016, how would the Fully stock be classified and at what value would it be reported on the balance sheet?

E10-16 Computing rate of return on total assets

Learning Objective 5

Avg. total assets $315,000,000

Colonial Exploration Company reported these figures for 2016 and 2015:

Income Statement—partial:	**2016**	**2015**
Interest Expense	$ 12,800,000	$ 14,500,000
Net Income	18,400,000	20,400,000
Balance Sheet—partial:	**Dec. 31, 2016**	**Dec. 31, 2015**
Total Assets	$ 410,000,000	$ 316,000,000

Compute the rate of return on total assets for 2016. (Round to two decimals.)

> Problems Group A

P10-17A Accounting for bond investments

Learning Objective 2

1. Dec. 31 Int. Rev. CR $15,750

Suppose Solomon Brothers purchases $750,000 of 5% annual bonds of Morin Corporation at face value on January 1, 2016. These bonds pay interest on June 30 and December 31 each year. They mature on December 31, 2025. Solomon intends to hold the Morin bond investment until maturity.

Requirements

1. Journalize Solomon Brothers's transactions related to the bonds for 2016.
2. Journalize the entry required on the Morin bonds maturity date. (Assume the last interest payment has already been recorded.)

P10-18A Classifying and accounting for stock investments

Learning Objectives 1, 3, 4

2. Sep. 16 Gain on Disposal CR $12,920

Brown Package Corporation generated excess cash and invested in securities as follows:

2016	
Jul. 2	Purchased 3,300 shares of Phyflexon, Inc. common stock at $12.00 per share. Brown stock in its active trading account and plans to sell the stock within three months, when need the cash for normal operations.
Aug. 21	Received a cash dividend of $0.60 per share on the Phyflexon stock investment.
Sep. 16	Sold the Phyflexon stock for $13.60 per share.
Oct. 8	Purchased 1,100 shares of Voltexar stock at $18.00 per share. The stock is held in the account as Brown Package plans to hold the Voltexar stock for less than five months.
Dec. 31	Voltexar stock's current market price is $4.00 per share.

Requirements

1. Classify each of the investments made during 2016. (Assume the investments represent less than 20% of ownership of outstanding voting stock.)
2. Journalize the 2016 transactions. Explanations are not required.
3. Prepare T-accounts for the investment assets, and show how to report the investments on Brown Package's balance sheet at December 31, 2016.

Learning Objectives 3, 4

1. Dec. 31 Fair Value Adjustment—AFS DR $36,000

P10-19A Accounting for stock investments

The beginning balance sheet of Party Source Co. included a $700,000 investment in Stewart stock (35% ownership). During the year, Party Source completed the following investment transactions:

Mar. 3	Purchased 3,000 shares at $11 per share of Cindy Software common stock as a long-term available-for-sale investment, representing 6% ownership.
May 15	Received a cash dividend of $0.92 per share on the Cindy investment.
Dec. 15	Received a cash dividend of $50,000 from Stewart investment.
31	Received Stewart's annual report showing $110,000 of net income.
31	Received Cindy's annual report showing $400,000 of net income for the year.
31	Stewart's stock fair value at year-end was $688,500.
31	Cindy's common stock fair value at year-end was $13 per share.

Requirements

1. Journalize the transactions for the year of Party Source.
2. Post transactions toT-accounts to determine the December 31, 2016, balances related to the investment and investment income accounts.
3. Prepare Party Source's partial balance sheet at December 31, 2016, from your answers in Requirement 2.

> Problems Group B

Learning Objective 2

1. Dec. 31 Int. Rev. CR $10,000

P10-20B Accounting for bond investments

Suppose Elliot Brothers purchases $1,200,000 of 5% annual bonds of Bridge Corporation at face value on January 1, 2016. These bonds pay interest on June 30 and December 31 each year. They mature on December 31, 2025. Elliot intends to hold the Bridge bond investment until maturity.

Requirements

1. Journalize Elliot Brothers's transactions related to the bonds for 2016.
2. Journalize the entry required on the Bridge bonds maturity date. (Assume the last interest payment has already been recorded.)

P10-21B Classifying and accounting for stock investments

Learning Objectives 1, 3, 4

2. Sep. 16 Gain on Disposal CR $14,760

Captain Transfer Corporation generated excess cash and invested in securities as follows:

2016	
Jul. 2	Purchased 4,200 shares of Pogo, Inc. common stock at $11.00 per share. Captain Transfer in its active trading account and plans to sell the stock within three months, when the need the cash for normal operations.
Aug. 21	Received a cash dividend of $0.20 per share on the Pogo stock investment.
Sep. 16	Sold the Pogo stock for $14.20 per share.
Oct. 8	Purchased 600 shares of Zuntech stock at $20.00 per share. The stock is held in the active trading account as Captain Transfer plans to hold the Zuntech stock for less than five months.
Dec. 31	Zuntech stock's current market price is $14.00 per share.

Requirements

1. Classify each of the investments made during 2016. (Assume the investments represent less than 20% of ownership of outstanding voting stock.)
2. Journalize the 2016 transactions. Explanations are not required.
3. Prepare T-accounts for the investment assets, and show how to report the investments on Captain Transfer's balance sheet at December 31 , 2016.

P10-22B Accounting for stock investments

Learning Objectives 3, 4

1. Dec. 31 Fair Value Adjustment—AFS DR $18,000

The beginning balance sheet of Music Source Co. included a $700,000 investment in Evan stock (35% ownership). During the year, Music Source completed the following investment transactions:

Mar. 3	Purchased 5,000 shares at $9 per share of Danny Software common stock as a longavailable-for-sale investment, representing 8% ownership.
May 15	Received a cash dividend of $0.88 per share on the Danny investment.
Dec. 15	Received a cash dividend of $80,000 from Evan investment.
31	Received Evan's annual report showing $100,000 of net income.
31	Received Danny's annual report showing $900,000 of net income for the year.
31	Evan's stock fair value at year-end was $655,000.
31	Danny's common stock fair value at year-end was $11 per share.

Requirements

1. Journalize the transactions for the year of Music Source.
2. Post transactions toT-accounts to determine the December 31, 2016, balances related to the investment and investment income accounts.
3. Prepare Music Source's partial balance sheet at December 31, 2016, from your answers in Requirement 2.

> Continuing Problem

P10-23 Accounting for stock investments

This problem continues the Daniels Consulting situation from Problem P9-42 of Chapter 9. Daniels Consulting invests its temporary excess cash in a brokerage account. On November 3, 2017, Daniels purchased 300 shares of Mauve Co. common stock for $15 per share. On December 31, 2017, Mauve's common stock was trading at $10 per share. Assume Daniels records the stock as a trading investment.

Requirements

1. Journalize the acquisition of Mauve stock on November 3, 2017.
2. Journalize any entries, if required, at December 31, 2017.
3. On January 25, 2018, Daniels sold the Mauve stock for $15.50 per share. Journalize the sale.

CRITICAL THINKING

> Decision Case 10-1

Rock Designs, Inc. is a jewelry store located in Miramar Beach, Florida. After Valentine's Day, the store often has excess cash to get it through the three-month slow season. The primary stockholder, Hardy Rock, wants to make this seasonal cash work for the business.

Requirements

1. Identify which investment class options are available to Rock Designs, Inc.
2. The company identifies that it wants to invest in the technology sector and has narrowed its choices to three companies: Apple Inc., Google Inc., and Microsoft Corporation. Prepare a brief analysis comparing the three companies, and recommend one of the three based on your analysis.

> Ethical Issue 10-1

As a result of the recent mortgage crisis, many banks reported record losses to their mortgage receivables and other assets based on the decline in these assets' fair values.

Requirements

1. What would the effect be to stakeholders if such losses were not reported in a timely way?
2. If a business chooses not to report these losses, is there an ethical issue involved? Who is hurt?

> Fraud Case 10-1

Wild Adventure conducts tours of wildlife reserves around the world. The company recently purchased a lodge in Adelaide, Australia, securing a 4% mortgage from First Bank. In addition to monthly payments, Wild Adventure must provide annual reports to the bank showing that the company has a current ratio of 1.2 or better.

After reviewing the annual reports, the CEO, N. O. Scrooge, approached Carl Hauptfleisch, the CFO, and stated, "We've decided we are going to move all our long-term and held-to-maturity investments into our brokerage account so we can sell them soon. Carl, go ahead and make the adjusting entries as of the current year-end."

Carl made the adjustments. The subsequent year, the economy turned, and the company's travel revenues dropped more than 60%. Wild Adventure eventually defaulted on the First Bank loan.

Requirements

1. What effect did the adjustments have on the financial statements? What effect did the adjustments have on the current ratio?
2. What type of information in the financial reports would have helped the bank detect this reclassification?
3. Has a fraud occurred? If so, what is the fraud?

> Financial Statement Case 10-1

Details about a company's investments appear in a number of places in the annual report. Use **Starbucks Corporation's** Fiscal 2013 annual report to answer the following questions. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's Fiscal 2013 annual report.

Requirements

1. What classifications of debt and/or equity security investments does Starbucks hold?
2. Review Notes 4 and 6. Give the breakdown of the short-term and long-term investments Starbucks held at September 29, 2013.
3. Review Starbucks's consolidated statement of cash flows for the year ended September 29, 2013. Identify each item related to the company's debt and equity security investments, the amount of the item, and the section of the cash flow statement in which the item appears.
4. Review Note 1, specifically Short-term and Long-term Investments. How are Starbucks's available-for-sale investments reported? How are Starbucks's trading investments reported?

> Team Project 10-1

Berkshire Hathaway, Inc. is a holding company that owns many diverse companies. Review the company's 2013 annual report. You can access it at **http://www.berkshirehathaway.com/2013ar/2013ar.pdf**.

Requirements

With a partner or group, lead your class in a discussion of the following questions or write a report as directed by your instructor.

1. What types of companies does Berkshire Hathaway own?
2. Review Note 3. At December 31, 2013, how much did the company hold in available-for-sale and held-to-maturity investments?
3. Review Berkshire's consolidated statement of cash flows for the year ended December 31, 2013. Identify each item related to the company's debt and equity security investments, the amount of the item, and the section of the cash flow statement in which the item appears.
4. Review Note 1(d). How, if at all, does the company use fair value measurements in regards to its investments?

> Communication Activity 10-1

In 150 words or fewer, explain the difference between trading investments and available-for-sale investments.

> Quick Check Answers

1. b **2.** c **3.** b **4.** c **5.** a **6.** c **7.** b **8.** c **9.** b **10.** a

11

Current Liabilities and Payroll

How Much Does One Employee Cost?

Mary Green, MD, recently opened a health care clinic, Family Medicine, that serves low-income families and uninsured individuals. Family Medicine prides itself on keeping its costs low but still providing excellent health care to its patients. When Mary opened the clinic, she hired only one part-time nurse. Now, with the clinic growing, Mary is considering hiring several more nurses and another doctor.

Mary knows that having employees is expensive. Not only does the business have to pay their wages, but there are additional payroll taxes that must be paid. As Mary is deciding what salary to offer her new employees, she must consider these additional costs. She knows that if she offers the new doctor a salary of $100,000, the business will end up paying more than $100,000. This is because of additional payroll taxes such as Social Security and unemployment compensation. In addition, Family Medicine will need to offer health care and retirement benefits to each employee. All of these extra expenses cost money—money she could be saving. But Mary knows that in order to provide the quality of service her patients expect, she must pay the cost of having quality employees.

How Do Businesses Account for Current Liabilities and Payroll?

We now begin our focus on liabilities, or debts, a business owes. Payroll is one of those liabilities. Companies such as UnitedHealth Group Incorporated, a leading health care company that serves more than 85 million people, value hiring smart, committed, and talented people. Part of UnitedHealth's recruiting package is the salary it offers employees. In addition, UnitedHealth Group also offers benefits such as vacation, health care, and retirement to reward its employees. Payroll and employee benefits are reported as current liabilities on the balance sheet until the company makes payment. In this chapter, we look at how businesses, such as UnitedHealth Group, account for and record payroll and other current liabilities.

Chapter 11 Learning Objectives

1. Account for current liabilities of known amount
2. Calculate and journalize basic payroll transactions
3. Account for current liabilities that must be estimated
4. Account for contingent liabilities
5. Use the times-interest-earned ratio to evaluate business performance

Up to this point, we've been focusing on all the assets a corporation owns. But what about the bills a business owes? A business needs to know what it owes (liabilities) and by what date they have to be paid. Why? To be sure the business has cash on hand to pay these bills. In this chapter, we focus on some common current liabilities a business may owe. As with other chapters, we'll continue to focus on Smart Touch Learning and see how it manages its current liabilities.

HOW ARE CURRENT LIABILITIES OF KNOWN AMOUNTS ACCOUNTED FOR?

Learning Objective 1

Account for current liabilities of known amount

Liabilities are debts that are owed to creditors. Liabilities have three main characteristics:

1. They occur because of a past transaction or event.
2. They create a present obligation for future payment of cash or services.
3. They are an unavoidable obligation.

Liabilities can be split into two main categories: current and long-term. In this chapter, we discuss current liabilities. **Current liabilities** must be paid either with cash or with goods and services within one year or within the entity's operating cycle if the cycle is longer than a year.

Accounts Payable, Notes Payable due within one year, Salaries Payable, Interest Payable, Unearned Revenue, and Income Tax Payable are all current liabilities. Any portion of a long-term liability that is due within the next year is also reported as a current liability. Current liabilities are listed on the balance sheet in the order in which they are due.

Long-term liabilities are liabilities that do not need to be paid within one year or within the entity's operating cycle, whichever is longer. Many Notes Payable are long-term, such as a mortgage on a building. We will explore more about long-term liabilities in the next chapter.

The amounts of most liabilities are known. For example, a business receives a bill that is due in 30 days or a business takes out a 90-day loan from a bank. We will begin our discussion with current liabilities of a known amount.

Liabilities
Debts that are owed to creditors.

Current Liability
A liability that must be paid with cash or with goods and services within one year or within the entity's operating cycle if the cycle is longer than a year.

Long-Term Liability
A liability that does not need to be paid within one year or within the entity's operating cycle, whichever is longer.

IFRS

IFRS defines current and long-term liabilities in the same manner as GAAP.

Accounts Payable

Amounts owed for products or services purchased on account are *accounts payable*. Because these are typically due in 30 days, they are current liabilities. We have seen many accounts payable illustrations in preceding chapters. Businesses can record accounts payable for the purchase of goods or for the receipt of services. Accounts payable occur because the business receives the goods or services before payment has been made.

Sales Tax Payable

Most states assess sales tax on retail sales. Retailers collect the sales tax in addition to the price of the item sold. Sales Tax Payable is a current liability because the retailer must pay the state in less than a year. Sales tax is usually calculated as a percentage of the amount of the sale.

For example, suppose December's taxable sales for Smart Touch Learning totaled \$10,000. The company collected an additional 6% sales tax, which would equal \$600 (\$10,000 × 0.06). The accounting clerk would record that month's cash sales as follows:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Cash	10,600	
	Sales Revenue		10,000
	Sales Tax Payable (\$10,000 × 0.06)		600
	To record cash sales and the related sales tax.		

$$\left.\frac{\mathbf{A}\uparrow}{\text{Cash}\uparrow}\right\} = \left\{\frac{\mathbf{L}\uparrow}{\text{Sales Tax Payable}\uparrow} + \frac{\mathbf{E}\uparrow}{\text{Sales Revenue}\uparrow}\right.$$

Sales tax is not an expense of the business. It is a current liability. Companies collect the sales tax and then forward it to the state at regular intervals. They normally submit it monthly, but they could file it at other intervals, depending on the state and the amount of the tax. To pay the tax, the company debits Sales Tax Payable and credits Cash.

Date	Accounts and Explanation	Debit	Credit
Jan. 20	Sales Tax Payable	600	
	Cash		600
	To record cash payment for sales tax payable.		

$$\left.\frac{\mathbf{A}\downarrow}{\text{Cash}\downarrow}\right\} = \left\{\frac{\mathbf{L}\downarrow}{\text{Sales Tax Payable}\downarrow} + \frac{\mathbf{E}}{\quad}\right.$$

Income Tax Payable

The federal government and many state governments require corporations to pay income tax on their net income. Federal income taxes are calculated on a corporate tax return, referred to as a Form 1120. The amount of taxes that the corporation owes but has not yet paid is classified as Income Tax Payable and is reported as a current liability on the balance sheet.

For example, assume that Smart Touch Learning incurred federal income tax payable of \$3,780. Smart Touch Learning would record the following journal entry:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Income Tax Expense	3,780	
	Income Tax Payable		3,780
	To record income tax expense incurred.		

$$\left.\frac{\mathbf{A}}{\quad}\right\} = \left\{\frac{\mathbf{L}\uparrow}{\text{Income Tax Payable}\uparrow} + \frac{\mathbf{E}\downarrow}{\text{Income Tax Expense}\uparrow}\right.$$

When Smart Touch Learning files its Form 1120 corporate tax return and makes payment, the corporation will record the following entry:

A↓	=	L↓	+	E
Cash↓		Income Tax Payable↓		

Date	Accounts and Explanation	Debit	Credit
Mar. 15	Income Tax Payable	3,780	
	Cash		3,780
	To record cash payment for income tax payable.		

Unearned Revenues

Unearned revenue is also called *deferred revenue*. Unearned revenue arises when a business has received cash in advance of providing goods or performing work and, therefore, has an obligation to provide goods or services to the customer in the future. Unearned revenues are current liabilities until they are earned.

Suppose Smart Touch Learning received $900 in advance on May 21 for a month's work beginning on that date. On May 21, because it received cash before earning the revenue, the company has a liability to perform work for the client. The liability is called Unearned Revenue. The entry made by the accounting clerk on May 21 follows:

A↑	=	L↑	+	E
Cash↑		Unearned Revenue↑		

Date	Accounts and Explanation	Debit	Credit
May 21	Cash	900	
	Unearned Revenue		900
	Collected cash for future services.		

During May, Smart Touch Learning delivered one-third of the work and earned $300 ($900 × 1/3) of the revenue. On May 31, the accounting clerk would record the following entry to show that some work had been completed and some revenue had now been earned:

A	=	L↓	+	E↑
		Unearned Revenue↓		Service Revenue↑

Date	Accounts and Explanation	Debit	Credit
May 31	Unearned Revenue	300	
	Service Revenue		300
	To record service revenue earned that was collected in advance.		

At this point, Smart Touch Learning has earned $300 of the revenue and still owes $600 of work to the customer as shown in the T-accounts:

Unearned Revenue

May 31	300	900	May 21
		600	**Bal.**

Service Revenue

		300	May 31

Short-Term Note Payable
A written promise made by the business to pay a debt, usually involving interest, within one year or less.

Short-Term Notes Payable

Short-term notes payable are a common form of financing. Short-term notes payable represent a written promise by the business to pay a debt, usually involving interest, within one year or less. Assume on May 1, Smart Touch Learning purchased merchandise inventory with a 10%, 90-day note payable, for $8,000. The company uses the perpetual inventory system. The entry to record the note follows:

Date	Accounts and Explanation	Debit	Credit
May 1	Merchandise Inventory	8,000	
	Notes Payable		8,000
	Purchased merchandise inventory in exchange for 90-day, 10% note.		

A↑		L↑	+	E
Merchandise Inventory↑	=	Notes Payable↑		

On July 30, when the note is due, Smart Touch Learning will pay the note plus interest and record the following entry:

Date	Accounts and Explanation	Debit	Credit
Jul. 30	Notes Payable	8,000	
	Interest Expense ($8,000 × 0.10 × 90/360)	200	
	Cash		8,200
	Paid note and interest at maturity.		

A↓		L↓	+	E↓
Cash↓	=	Notes Payable↓		Interest Expense↑

Remember that the calculation for interest is principal × interest rate × time.

Businesses occasionally borrow cash from banks. The bank requires the business to sign a *promissory note* that states that the business will pay the *principal* plus *interest* at a specified *maturity date*. As an example, assume that on November 1, 2016, Smart Touch Learning borrows $10,000 from First Street Bank at 6% for five months. On November 1, the accounting clerk records the following entry:

Date	Accounts and Explanation	Debit	Credit
2016			
Nov. 1	Cash	10,000	
	Notes Payable		10,000
	Received cash in exchange for 5-month, 6% note.		

A↑		L↑	+	E
Cash↑	=	Notes Payable↑		

At year-end, the matching principle requires the business to accrue interest expense for November and December as follows:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Interest Expense ($10,000 × 0.06 × 2/12)	100	
	Interest Payable		100
	Accrued interest expense at year-end.		

A		L↑	+	E↓
	=	Interest Payable↑		Interest Expense↑

The interest accrual at December 31, 2016, allocated $100 of the interest on this note to 2016. During 2017, the interest on this note for the three remaining months is $150. When Smart Touch Learning records payment for the note, it will record the remaining interest expense and also remove the interest payable and note payable from the books as shown:

A↓ = L↓ + E↓

Cash↓ = Notes Payable↓ Interest Payable↓ + Interest Expense↑

Date	Accounts and Explanation	Debit	Credit
2017			
Apr. 1	Notes Payable	10,000	
	Interest Expense ($10,000 × 0.06 × 3/12)	150	
	Interest Payable	100	
	Cash		10,250
	Paid note and interest at maturity.		

Current Portion of Long-Term Notes Payable

Current Portion of Notes Payable
The amount of the principal that is payable within one year.

Long-term notes payable are typically reported in the long-term liability section of the balance sheet. If, however, the long-term debt is paid in installments, the business will report the current portion of notes payable (also called *current maturity*) as a current liability. The **current portion of notes payable** is the principal amount that will be paid within one year. The remaining portion of the note will be classified as long-term.

Let's consider a $20,000 note payable that is paid in $5,000 installments over four years. The portion that must be paid within one year, $5,000, is current. The remaining $15,000 will be classified as long-term. No journal entry is needed to reclassify the current portion. It is, instead, only classified as current or long-term for reporting purposes on the balance sheet. Notice that the reclassification does not change the total amount of debt. It only reclassifies $5,000 of the total debt from long-term to current.

Try It!

On August 10, Swanson Company recorded sales of merchandise inventory on account, $4,000. The sales were subject to sales tax of 4%. The company uses the perpetual inventory system. On September 30, Swanson paid $500 of sales tax to the state.

1. Journalize the transaction to record the sale on August 10. Ignore cost of goods sold.
2. Journalize the transaction to record the payment of sales tax to the state.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S11-1 through S11-5. MyAccountingLab

HOW DO COMPANIES ACCOUNT FOR AND RECORD PAYROLL?

Learning Objective 2
Calculate and journalize basic payroll transactions

Payroll, also called *employee compensation*, also creates liabilities for a business. For service organizations—such as CPA firms and travel agencies—payroll is *the* major expense. Labor cost is so important that most businesses develop a special payroll system.

There are numerous ways to label an employee's pay:

- *Salary* is pay stated at an annual, monthly, or weekly rate, such as $62,400 per year, $5,200 per month, or $1,200 per week.

- *Wages* are pay amounts stated at an hourly rate, such as $15 per hour.
- *Commission* is pay stated as a percentage of a sale amount, such as a 5% commission on a sale. A realtor who earns 5% commission, for example, earns $5,000 on a $100,000 sale of real estate ($100,000 × 5%).
- *Bonus* is pay over and above base salary (or wage or commission). A bonus is usually paid for exceptional performance—in a single amount after year-end.
- *Benefits* are extra compensation—items that are not paid directly to the employee. Benefits cover health, life, and disability insurance. The employer pays the insurance company, which then provides coverage for the employee. Another type of benefit, retirement, sets aside money for the employee for his or her future retirement.

Businesses pay employees at a base rate for a set period—called *straight time*. For additional hours—*overtime*—the employee may get a higher pay rate, depending on the job classification and wage and hour laws.

Assume Ryan Park was hired to work for Smart Touch Learning. His pay is as follows:

- Ryan earns wages of $15 per hour for straight time (40 hours), so his weekly pay is $600 ($15 per hour × 40 hours).
- The company pays *time-and-a-half* for overtime. That rate is 150% (1.5 times) the straight-time pay rate. Thus, Ryan earns $22.50 per hour of overtime ($15.00 × 1.5).
- For working 42 hours during a week, he earns gross pay of $645, computed as follows:

Straight-time pay for 40 hours	$ 600
Overtime pay for 2 hours: 2 × $22.50	45
Gross Pay	$ 645

Gross Pay and Net (Take-Home) Pay

Two pay amounts are important for accounting purposes. **Gross pay** is the total amount of salary, wages, commissions, and bonuses earned by the employee during a pay period before taxes or any other deductions. Gross pay is an expense to the employer. In the preceding example, Ryan Park's gross pay was $645. **Net pay** is the amount the employee gets to keep. Net pay is also called *take-home pay*. Net pay equals gross pay minus all deductions such as income tax withheld. The employer either writes a paycheck to each employee for his or her take-home pay or directly deposits the employee's take-home pay into the employee's bank account.

Gross Pay
The total amount of salary, wages, commissions, and any other employee compensation before taxes and other deductions.

Net Pay
Gross pay minus all deductions. The amount of compensation that the employee actually takes home.

Employee Payroll Withholding Deductions

The federal government, most states, and many municipalities require employers to deduct taxes from employee paychecks. Insurance companies and investment companies may also get some of the employee's gross pay. Amounts withheld from paychecks are called *withholding deductions*. Payroll withholding deductions are the difference between gross pay and take-home pay. These deductions are withheld from paychecks and sent directly to the government, to insurance companies, or to other entities. Payroll withholding deductions fall into two categories:

- *Required deductions*, such as employee federal and state income tax, Social Security tax and other deductions required by federal, state, or local laws. For example, employees pay their income tax and Social Security tax through payroll deductions.
- *Optional deductions*, including insurance premiums, retirement plan contributions, charitable contributions, and other amounts that are withheld at the employee's request.

After being withheld, payroll deductions become the liability of the employer, who then pays the outside party—taxes to the government and contributions to charitable organizations, for example.

Withholding for Employee Income Tax

Income Tax Withholding
Income tax deducted from an employee's gross pay.

U.S. law and some states, cities, and counties require companies to withhold income tax from employee paychecks. The income tax deducted from gross pay is called **income tax withholding**. The amount withheld depends on the employee's gross pay and on the number of *withholding allowances* he or she claims.

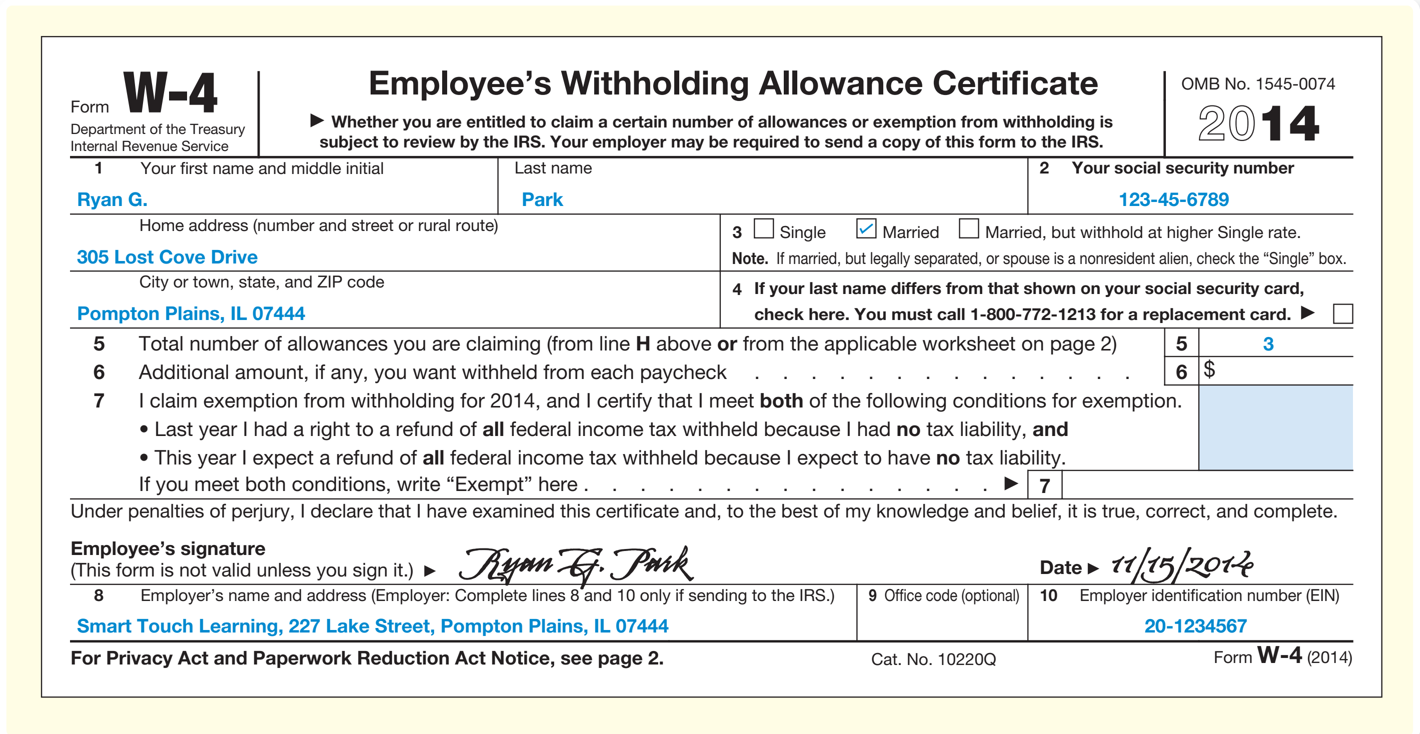
For federal tax withholdings, an employee files Form W-4 with his or her employer to indicate the number of allowances claimed for income tax withholding. Each allowance lowers the amount of tax withheld:

Federal Insurance Contributions Act (FICA)
The federal act that created the Social Security tax that provides retirement, disability, and medical benefits.

- An unmarried taxpayer usually claims one allowance.
- A childless married couple usually claims two allowances.
- A married couple with one child usually claims three allowances, and so on.

Exhibit 11-1 shows a W-4 for Ryan Park, who claims married with three allowances (lines 3 and 5).

Exhibit 11-1 | **W-4**



Form **W-4**
Department of the Treasury
Internal Revenue Service

Employee's Withholding Allowance Certificate

▶ **Whether you are entitled to claim a certain number of allowances or exemption from withholding is subject to review by the IRS. Your employer may be required to send a copy of this form to the IRS.**

OMB No. 1545-0074
2014

1 Your first name and middle initial: Ryan G.
Last name: Park
2 **Your social security number**: 123-45-6789

Home address (number and street or rural route): 305 Lost Cove Drive
3 ☐ Single ☑ Married ☐ Married, but withhold at higher Single rate.
Note. If married, but legally separated, or spouse is a nonresident alien, check the "Single" box.

City or town, state, and ZIP code: Pompton Plains, IL 07444
4 **If your last name differs from that shown on your social security card, check here. You must call 1-800-772-1213 for a replacement card.** ▶ ☐

5 Total number of allowances you are claiming (from line **H** above **or** from the applicable worksheet on page 2) 5 3
6 Additional amount, if any, you want withheld from each paycheck . . . . 6 $
7 I claim exemption from withholding for 2014, and I certify that I meet **both** of the following conditions for exemption.
• Last year I had a right to a refund of **all** federal income tax withheld because I had **no** tax liability, **and**
• This year I expect a refund of **all** federal income tax withheld because I expect to have **no** tax liability.
If you meet both conditions, write "Exempt" here . . . . ▶ 7

Under penalties of perjury, I declare that I have examined this certificate and, to the best of my knowledge and belief, it is true, correct, and complete.

Employee's signature
(This form is not valid unless you sign it.) ▶ Ryan G. Park
Date ▶ 11/15/2014

8 Employer's name and address (Employer: Complete lines 8 and 10 only if sending to the IRS.): Smart Touch Learning, 227 Lake Street, Pompton Plains, IL 07444
9 Office code (optional)
10 Employer identification number (EIN): 20-1234567

For Privacy Act and Paperwork Reduction Act Notice, see page 2. Cat. No. 10220Q Form **W-4** (2014)

Withholding for Employee Social Security Tax (FICA)

Social Security (FICA) Tax
Federal Insurance Contributions Act (FICA) tax, which is withheld from employees' pay and matched by the employer.

The **Federal Insurance Contributions Act (FICA)**, also known as the Social Security Act, created the Social Security tax. The Social Security program provides retirement, disability, and medical benefits. The law requires employers to withhold **Social Security (FICA) tax** from employees' paychecks. The FICA tax has two components:

1. OASDI (old age, survivors, and disability insurance)
2. Medicare (medical benefits)

OASDI provides retirement benefits to individuals based upon age, benefits to survivors of qualified individuals, and disability insurance to individuals who cannot work because of a medical condition. The amount of tax withheld varies from year to year because the wage base is subject to OASDI tax changes each year. For 2014, the OASDI tax applies to the first $117,000 of employee earnings in a year. The taxable amount of earnings is adjusted annually. The OASDI tax rate for employees at the time of this writing is 6.2%. Therefore, the maximum OASDI tax that an employee paid in 2014 was $7,254 ($117,000 × 0.062).

The Medicare portion of the FICA tax provides health insurance to individuals based on age or disability. Medicare applies to all employee earnings—that means there is no maximum tax. At the time of this writing, this tax rate is 1.45% for earnings up to $200,000. Earnings over $200,000 will be taxed at 2.35%. Therefore, an employee pays a combined FICA tax rate of 7.65% (6.2% + 1.45%) of the first $117,000 of annual earnings ($117,000 is the 2014 cap as it was the most current wage cap at the time of printing), plus 1.45% of earnings above $117,000.

The percentage used and the wage base for payroll withholdings and taxes vary from year to year. We are using amounts that are current at the time of printing. You should use these numbers when you complete this chapter's assignments.

Assume that James Kolen, another employee of Smart Touch Learning, earned $112,700 prior to December. Kolen's salary for December is $10,000. Kolen's FICA tax withheld from his paycheck is calculated as follows:

	OASDI		**Medicare**
Employee earnings subject to tax	$ 117,000		No Max
Employee earnings prior to the current month	− 112,700		
Current pay subject to tax	$ 4,300		$ 10,000
Tax rate	× 0.062		× 0.0145
Tax to be withheld from paycheck	$ 267*		$ 145
Total FICA tax withheld ($267 + $145)		$412	

*Numbers in examples are rounded to nearest dollar for simplicity. Payroll amounts are usually rounded to the nearest cent.

Notice that only $4,300 of Kolen's $10,000 salary is subject to OASDI tax. This is because in December, Kolen reaches the maximum amount of earnings that is subject to OASDI. Once an employee has earned $117,000, no further earnings are taxed for OASDI in that year.

Medicare tax, on the other hand, has no maximum. All earnings are subject to the tax. Kolen pays Medicare tax on the entire $10,000 earned in December.

Why did James Kolen only pay OASDI tax on $4,300 of earnings?

Optional Withholding Deductions

As a convenience to employees, some companies withhold payroll deductions and then pay designated organizations according to employee instructions. Insurance premiums, retirement savings, union dues, and gifts to charities are examples.

The table on the next page summarizes James Kolen's final pay period on December 31 assuming he authorized a $180 payment for health insurance and a $20 contribution to United Way. Employee income tax is assumed to be 20% of gross pay.

Gross pay		$ 10,000
Withholding deductions:		
Employee income tax (20%)	$ 2,000	
Employee OASDI tax (calculated on prior page)	267	
Employee Medicare tax (1.45%)	145	
Employee health insurance	180	
Employee contribution to United Way	20	
Total withholdings		2,612
Net (take-home) pay		$ 7,388

Payroll Register

Payroll Register
A schedule that summarizes the earnings, withholdings, and net pay for each employee.

Many companies use a **payroll register** to help summarize the earnings, withholdings, and net pay for each employee. Exhibit 11-2 shows the payroll register for Smart Touch Learning for the month of December.

Exhibit 11-2 **Payroll Register**

Employee Name	Earnings			Withholdings						Net Pay	Check No.	Salaries and Wages Expense
	Beginning Cumulative Earnings	Current Period Earnings	Ending Cumulative Earnings	OASDI	Medicare	Income Tax	Health Insurance	Other	Total Withholdings			
James Kolen	$ 112,700	$ 10,000	$ 122,700	$ 267	$ 145	$ 2,000	$ 180	$ 20	$ 2,612	$ 7,388	530	$ 10,000
Benito Munez	62,100	5,500	67,600	341	80	1,100	110	0	1,631	3,869	531	5,500
Ryan Park	37,400	2,580	39,980	160	37	516	110	0	823	1,757	532	2,580
Lisa Smart	0	4,000	4,000	248	58	800	65	0	1,171	2,829	533	4,000
Sharon Zapato	71,500	6,500	78,000	403	94	1,300	180	40	2,017	4,483	534	6,500
Total	$ 283,700	$ 28,580	$ 312,280	$ 1,419	$ 414	$ 5,716	$ 645	$ 60	$ 8,254	$ 20,326		$ 28,580

Don't confuse corporate income tax owed by the corporation, which creates Income Tax Payable, and personal income tax withheld from the employees' paychecks, which creates Employee Income Taxes Payable.

A business's payroll register typically includes the following columns:

1. Employee Name
2. Beginning cumulative earnings—the amount the employee has earned through the last pay period.
3. Current period earnings—earnings for the current period (includes regular and overtime earnings, commissions, and bonuses).
4. Ending cumulative earnings—beginning cumulative earnings plus current period earnings.
5. OASDI—6.2% tax on the first $117,000 earnings.
6. Medicare—1.45% tax on all earnings.
7. Income Tax—includes federal, state, and any local government income tax withheld.
8. Health Insurance—withholdings made for employee-paid health care coverage.
9. Other—employees' voluntary withholdings such as charitable contributions and union dues.

10. Total Withholdings—total of all withholdings.
11. Net Pay—current period earnings less total withholdings. This is the amount that is paid to each employee.
12. Check No.—the check number used to make payment for earnings.
13. Salaries and Wages Expense—the amount debited to Salaries and Wages Expense for the current pay period.

Journalizing Employee Payroll

The payroll register is used to record the payroll journal entry. Payroll and payroll withholdings are recorded as liabilities until the amounts are paid. The totals from the payroll register will be used to create the journal entry for Smart Touch Learning.

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Salaries and Wages Expense	28,580	
	FICA—OASDI Taxes Payable		1,419
	FICA—Medicare Taxes Payable		414
	Employee Income Taxes Payable		5,716
	Employee Health Insurance Payable		645
	United Way Payable		60
	Salaries and Wages Payable		20,326
	To record salaries and wages expense and payroll withholdings.		

A		L↑	+	E↓
	=	Various Payables↑ Salaries and Wages Payable↑		Salaries and Wages Expense↑

In the above journal entry, Salaries and Wages Expense ($28,580) represents the gross pay for all employees. Gross pay includes both the amount owed for salaries and wages ($20,326) and payroll withholdings ($1,419 + $414 + $5,716 + $645 + $60).

On payday, Smart Touch Learning will make payment of $20,326 to its employees and record the following journal entry:

Date	Accounts and Explanation	Debit	Credit
Jan. 5	Salaries and Wages Payable	20,326	
	Cash		20,326
	To record payment of salaries.		

A↓		L↓	+	E
Cash↓	=	Salaries and Wages Payable↓		

The other payable accounts, FICA, Income Taxes Payable, Health Insurance, and any charitable contributions, will be removed from the books when payments are made on those specific payables with debits to the liability accounts and a credit to Cash.

Employer Payroll Taxes

In addition to income tax and FICA tax, which are withheld from employee paychecks, *employers* must pay at least three payroll taxes. These taxes are not withheld from employees' gross earnings but instead are paid by the employer:

1. Employer FICA tax (OASDI and Medicare)
2. State unemployment compensation tax (SUTA)
3. Federal unemployment compensation tax (FUTA)

Employer FICA Tax

In addition to the FICA tax withheld from the employee's paycheck, the employer must also pay both OASDI and Medicare. The employer portion of OASDI is 6.2% on the first $117,000 of each employee's annual earnings. The employer's tax rate for Medicare is 1.45% on all earnings. The Social Security system is funded by contributions from both the employer and employee.

State and Federal Unemployment Compensation Taxes

The Federal Unemployment Tax Act (FUTA) and the State Unemployment Tax Act (SUTA) finance workers' compensation for people laid off from work. These **unemployment compensation taxes** are paid by the employer; they are not deducted from employees' gross pay. (Some states require employees to contribute to SUTA. For our purposes, we will assume that unemployment compensation taxes are paid only by the employer.) In recent years, employers have paid a combined tax of 6.0% on the first $7,000 of each employee's annual earnings for unemployment tax. The proportion paid to the state depends on the individual state, but for many it is 5.4% to the state plus 0.6% to the federal government. For this payroll tax, the employer uses two liability accounts:

Unemployment Compensation Tax
Payroll tax paid by employers to the government, which uses the cash to pay unemployment benefits to people who are out of work.

- Federal Unemployment Taxes Payable (FUTA Payable)
- State Unemployment Taxes Payable (SUTA Payable)

Exhibit 11-3 shows the distribution of payroll for an employee who earns $1,000, assuming the employee has not reached the payroll tax limits.

Exhibit 11-3 | **Payroll Costs**

Employee's taxes and other withholdings				Employer's taxes			
Net (Take-Home) Pay	OASDI (6.2% on first $117,000)	Medicare (1.45% on all earnings)	Income Tax (20% assumed)	OASDI (6.2% on first $117,000)	Medicare (1.45% on all earnings)	FUTA (0.6% on first $7,000)	SUTA (5.4% on first $7,000)
$723 +	$62 +	$15 +	$200	$62 +	$15 +	$6 +	$54
=$1,000				**=$137**			
Employer pays a total of $1,137.							

Journalizing Employer Payroll Taxes

Smart Touch Learning's employer payroll taxes for December will be calculated as follows:

	Earnings			Employer Payroll Taxes				
Employee Name	**Beginning Cumulative Earnings**	**Current Period Earnings**	**Ending Cumulative Earnings**	**OASDI (6.2%)**	**Medicare (1.45%)**	**FUTA (0.6%)**	**SUTA (5.4%)**	**Total Taxes**
James Kolen	$ 112,700	$ 10,000	$ 122,700	$ 267	$ 145	$ 0	$ 0	$ 412
Benito Munez	62,100	5,500	67,600	341	80	0	0	421
Ryan Park	37,400	2,580	39,980	160	37	0	0	197
Lisa Smart	0	4,000	4,000	248	58	24	216	546
Sharon Zapato	71,500	6,500	78,000	403	94	0	0	497
Total	$ 283,700	$ 28,580	$ 312,280	$ 1,419	$ 414	$ 24	$ 216	$ 2,073

As with employee contributions, the federal FICA—OASDI is determined as 6.2% on the first $117,000 earned by each employee. Smart Touch Learning must pay OASDI tax on all employees; however, the amount paid on James Kolen's earnings is limited to the first $117,000 [($117,000 − $112,700) × 6.2% = $267]. FICA—Medicare applies to all earnings at a rate of 1.45%.

FUTA (0.6%) and SUTA (5.4%) tax is only paid on the first $7,000 of each employee's earnings. Smart Touch Learning will only pay unemployment taxes on Lisa Smart because all other employees have earned more than $7,000 to date.

Smart Touch Learning records the employer's payroll tax expense as a debit to Payroll Tax Expense and a credit to the various payable accounts:

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Payroll Tax Expense	2,073	
	FICA—OASDI Taxes Payable		1,419
	FICA—Medicare Taxes Payable		414
	Federal Unemployment Taxes Payable		24
	State Unemployment Taxes Payable		216
	To record employer's payroll tax expense.		

A		L↑	+	E↓
	=	Various Payables↑		Payroll Tax Expense↑

Internal Control Over Payroll

There are two main controls for payroll:

- Controls for efficiency
- Controls to safeguard payroll disbursements

Controls for Efficiency

Payroll transactions are ideal for computer processing. The payroll data are stored in a file, and the computer makes the calculations, prints paychecks, and updates all records electronically. In addition, companies may require direct deposits for employees' pay so that paper checks do not have to be written to each employee. Direct deposits also increase efficiency by reducing the amount of reconciling needed on outstanding checks.

Controls to Safeguard Payroll Disbursements

A controller of a small business can monitor his or her payroll by personal contact with employees. Large companies cannot. A particular risk is that a paycheck may be written to a fictitious person and cashed by a dishonest employee. To guard against this, large businesses adopt strict internal controls for payroll.

Hiring and firing employees should be separated from accounting and from passing out paychecks. Photo IDs ensure that only actual employees are paid. Employees clock in at the start and clock out at the end of the workday to prove their attendance and hours worked.

The foundation of internal control is the separation of duties. This is why all but the smallest companies have separate departments for the following activities:

- The Human Resources Department hires and fires workers.
- The Payroll Department maintains employee earnings records.
- The Accounting Department records all transactions.
- The Treasurer distributes paychecks to employees.

Try It!

3. Theodore Simpson works for Blair Company all year and earns a monthly salary of $4,000. There is no overtime pay. Based on Theodore's W-4, Blair withholds income taxes at 15% of his gross pay. As of July 31, Theodore had $28,000 of cumulative earnings.

Journalize the accrual of salary expense for Blair Company related to the employment of Theodore Simpson for the month of August.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S11-6 through S11-8. MyAccountingLab

HOW ARE CURRENT LIABILITIES THAT MUST BE ESTIMATED ACCOUNTED FOR?

Learning Objective 3
Account for current liabilities that must be estimated

A business may know that a liability exists but not know the exact amount. The business cannot simply ignore the liability. It must estimate the amount of the liability and report it on the balance sheet. Common examples of liabilities that are often estimated are bonus plans, vacation pay, health and pension benefits, and warranties.

Bonus Plans

IFRS

Under IFRS, current liabilities are sometimes called "provisions" rather than payables. For example, IFRS uses Employee Provisions instead of Wages Payable and Provision for Income Tax instead of Income Tax Payable.

Many companies give bonuses to their employees in addition to their regular wages. These bonuses are often based on meeting a specific goal, such as the employee meeting an expected sales goal or the business achieving a target profit. Usually a company does not know the amount of the year-end bonus at year-end; the company instead estimates the amount of the bonus based on a set percentage. For example, assume Smart Touch Learning estimates that it will pay a 5% bonus on annual net income after deducting the bonus. Assume the company reports net income of $315,000 before the calculation of the bonus. The accounting department will calculate the bonus as follows:

$$\begin{aligned}\text{Bonus} &= (\text{Bonus \%} \times \text{Net income before bonus}) / (1 + \text{Bonus \%})\\ &= (0.05 \times \$315{,}000) / (1 + 0.05)\\ &= \$15{,}000\end{aligned}$$

This formula allows you to back into the bonus amount. For example, net income minus the bonus is $300,000 ($315,000 − $15,000). The bonus of $15,000 is really 5% of net income after the bonus has been subtracted ($300,000 × 0.05 = $15,000).

Assuming Smart Touch Learning will not make payment until the next year, it must record a liability for the bonus due to its employees. The accounting clerk will record the following entry:

A	=	L↑	+	E↓
		Employee Bonus Payable↑		Employee Bonus Expense↑

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Employee Bonus Expense	15,000	
	Employee Bonus Payable		15,000
	To record employee bonus expense.		

When Smart Touch Learning makes payment, it will debit Employee Bonus Payable and credit Cash.

Vacation, Health, and Pension Benefits

Businesses typically offer vacation, health, and pension benefits to its employees. A **pension plan** provides benefits to retired employees. Vacation, health, and pension benefits must be estimated and recorded as a liability. Suppose Smart Touch Learning employees earn two weeks of vacation throughout the year. The company estimates that the cost of providing vacation benefits is $1,000 per month. The accounting clerk will record the following journal entry monthly:

Pension Plan
A plan that provides benefits to retired employees.

Date	Accounts and Explanation	Debit	Credit
	Vacation Benefits Expense	1,000	
	Vacation Benefits Payable		1,000
	To record employee vacation benefits expense.		

A		L↑	+	E↓
	=	Vacation Benefits Payable↑		Vacation Benefits Expense↑

When an employee takes paid vacation, Smart Touch Learning will reduce the liability, Vacation Benefits Payable, with a debit and credit Cash. Other benefits, such as health and pension benefits, are recorded in the same manner.

Warranties

Many corporations guarantee their products against defects under **warranty** agreements. The time period of warranty agreements varies. The matching principle requires businesses to record Warranty Expense in the same period that the company records the revenue related to that warranty. The expense, therefore, is incurred when the company makes a sale, not when the company pays the warranty claims. At the time of the sale, the company does not know the exact amount of warranty expense but can estimate it.

Warranty
An agreement that guarantees a company's product against defects.

Assume that Smart Touch Learning made sales on account of $50,000 (cost of merchandise inventory sold, $35,000) subject to product warranties on June 10 and estimates that warranty costs will be 3% of sales. The company would record the sales revenue, cost of goods sold, and estimated warranty expense as follows:

Date	Accounts and Explanation	Debit	Credit
Jun. 10	Accounts Receivable	50,000	
	Sales Revenue		50,000
	Sale on account.		
10	Cost of Goods Sold	35,000	
	Merchandise Inventory		35,000
	Recorded the cost of goods sold.		
10	Warranty Expense ($50,000 × 0.03)	1,500	
	Estimated Warranty Payable		1,500
	To accrue warranty payable.		

A↑		L	+	E↑
Accounts Receivable↑	=			Sales Revenue↑

A↓		L	+	E↓
Merchandise Inventory↓	=			Cost of Goods Sold↑

A		L↑	+	E↓
	=	Estimated Warranty Payable↑		Warranty Expense↑

Assume that some of Smart Touch Learning's customers make claims that must be honored through the warranty offered by the company. The warranty costs total $800 and are made on June 27. The company replaces the defective goods and makes the following journal entry:

A↓		L↓	+	E
Merchandise Inventory↓	=	Estimated Warranty Payable↓		

Date	Accounts and Explanation	Debit	Credit
Jun. 27	Estimated Warranty Payable	800	
	Merchandise Inventory		800
	To replace merchandise inventory under warranty.		

Smart Touch Learning's expense on the income statement is $1,500, the estimated amount, not the $800 actually honored. After honoring these warranties, the company's liability account has a credit balance of $700. This $700 balance represents warranty claims Smart Touch Learning expects to honor in the future based on its estimates; therefore, the $700 is a liability to Smart Touch Learning.

Estimated Warranty Payable

Jun. 27	800	1,500	Jun. 10
		700	Bal.

ETHICS

How much is the warranty expense?

Henry Stevenson works as the manager of Used Car Superstore. The business prides itself on including a three-year bumper-to-bumper warranty on all car sales—no matter how old the car. Henry's job responsibilities include estimating the amount of the warranty on each car sale. Henry knows that the older the car is, the higher the warranty cost will be to the business. Edward Wolf, the CEO, has been criticizing Henry for the amount of warranty expense he has been recording. Edward believes that Henry is overestimating the cost of the warranty and has told Henry that he needs to cut the cost in half. What should Henry do? What would you do?

Solution

Accounting for warranties can pose specific ethical challenges because it involves estimates instead of actual proven numbers. Businesses like to show high levels of net income in order to look successful. As a result, upper-level managers, such as Edward, may encourage employees to overlook some expenses and liabilities at the end of the accounting period. If Henry does not record the warranty expense or fails to record it at a reasonable amount, total expenses and total liabilities will be understated and net income will be overstated. This might make the company appear to be in better financial condition than it is. Henry should discuss how he determines the estimated cost with his boss. They should decide on a reasonable and accurate number to record as warranty expense.

Try It!

4. O'Conner guarantees its vacuums for four years. Prior experience indicates that warranty costs will be approximately 6% of sales. Assume that O'Conner made sales totaling $200,000 during 2016. Record the warranty expense for the year.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S11-9 through S11-11. MyAccountingLab

HOW ARE CONTINGENT LIABILITIES ACCOUNTED FOR?

Learning Objective 4
Account for contingent liabilities

A **contingent liability** is a potential, rather than an actual, liability because it depends on a *future* event. For a contingent liability to be paid, some event (the contingency) must happen in the future. For example, suppose Smart Touch Learning is sued because of alleged patent infringement on one of its online learning videos. The company, therefore, faces a contingent liability, which may or may not become an actual liability. If the outcome of this lawsuit is unfavorable, it could hurt Smart Touch Learning by increasing its liabilities. Therefore, it would be unethical to withhold knowledge of the lawsuit from investors and creditors.

Contingent Liability
A potential liability that depends on some future event.

Another contingent liability arises when a company *co-signs a note payable* for another entity. The company co-signing has a contingent liability until the note comes due and is paid by the other entity. If the other company pays off the note, the contingent liability vanishes. If the other company doesn't pay off the note, the co-signing company must pay the debt for the other entity. How businesses record or don't record contingent liabilities is based on one of three likelihoods of the event occurring in the future:

- Remote
- Reasonably possible
- Probable

Remote Contingent Liability

A contingency that is remote has little chance of the event occurring in the future. If a contingency is remote, the company does not need to record a liability and does not need to disclose it in the notes to the financial statements. An example of a remote contingency would be a frivolous lawsuit.

Reasonably Possible Contingent Liability

Contingencies that are reasonably possible have a greater chance of occurring but are not likely. A reasonably possible contingency should be described in the notes to the financial statements. For example, consider a company that is the defendant in a significant lawsuit. If the company has been advised by legal counsel that it is reasonably possible that it will lose the lawsuit, then it should report the lawsuit in its notes to the financial statements.

Probable Contingent Liability

If a contingency is probable, it means that the future event is likely to occur. Only contingencies that are probable *and* can be estimated are recorded as a liability and an expense is accrued. An example of an estimable probable contingency is a warranty.

Contingencies that are probable but *cannot* be estimated are disclosed in the notes to the financial statements. A liability is not recorded because the amount of the contingency cannot be estimated. Exhibit 11-4 (on the next page) summarizes the rules for contingent liabilities.

IFRS

Under IFRS, "probable" is defined more broadly as "more likely than not" that the future event will result in a liability. "More likely than not" means more than a 50% chance.

Exhibit 11-4 | **Contingent Liabilities**

Likelihood of Future Event	How to Report the Contingency
Remote	Do not disclose.
Reasonably possible	Describe the situation in a note to the financial statements.
Probable and the amount of the expense *cannot* be estimated	Describe the situation in a note to the financial statements.
Probable and the amount of the expense *can* be estimated	Record an expense and a liability based on estimated amounts.

DECISIONS

How should the contingency be reported?

Emily Gallagher is the independent auditor of Tate Manufacturing, a maker of handheld drills and other carpentry tools. Emily is evaluating current lawsuits for the company to determine whether any contingent liabilities should be disclosed. Tate Manufacturing is currently in litigation for a product liability case. The suit claims that a Tate handheld drill heated up quickly and caused a fire. Tate's attorney has told Emily that it is likely that the manufacturer will lose the case, but he does not want to estimate the amount of damages. The attorney is concerned that estimating the amount of damages would establish a dollar amount for settlement and could place their case in jeopardy. What should Emily do?

Solution

GAAP requires that businesses report a contingency if it is probable that the event will occur in the future. The issue here is where the reporting should be made. If the attorney cannot reasonably estimate the amount of the possible damage award, Tate should report the contingent liability in the notes to the financial statements. If an amount can be determined, Tate Manufacturing should record an expense and a liability based on the estimated amount. Emily should determine whether the attorney *can* estimate the damages but just doesn't want to. If the damages can be estimated, Emily should require that the company record a contingent liability.

Alternative Solution

The attorney's concern is understandable. He feels that disclosing the amount of the contingent liability could hurt the determination of the case. If the jury were to find out about the disclosure, it might be more likely to award damages to the plaintiff, or the plaintiff might be able to negotiate a larger settlement with Tate. The attorney has a right to be concerned about the transparency of the financial reporting and potential damage to the outcome of the case. The attorney should provide an estimate only if he is reasonably confident with the amount of damages.

Try It!

Match the likelihood of a future event with the reporting of the contingency. An answer may be selected more than once.

Likelihood of Future Event	How to Report the Contingency
5. Remote	**a.** Do not disclose.
6. Reasonably possible	**b.** Record an expense and a liability based on estimated amounts.
7. Probable and the amount of the loss *cannot* be estimated	**c.** Describe the situation in a note to the financial statements.
8. Probable and the amount of the loss *can* be estimated	

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S11-12. MyAccountingLab

HOW DO WE USE THE TIMES-INTEREST-EARNED RATIO TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 5

Use the times-interest-earned ratio to evaluate business performance

Investors can use the **times-interest-earned ratio** to evaluate a business's ability to pay interest expense. This ratio measures the number of times earnings before interest and taxes (EBIT) can cover (pay) interest expense. The times-interest-earned ratio is also called the *interest-coverage ratio*. A high interest-coverage ratio indicates a business's ease in paying interest expense; a low ratio suggests difficulty. The times-interest-earned ratio is calculated as EBIT (Net income + Income tax expense + Interest expense) divided by Interest expense.

Times-Interest-Earned Ratio

Evaluates a business's ability to pay interest expense. (Net income + Income tax expense + Interest expense) / Interest expense.

Let's evaluate **Green Mountain Coffee Roasters, Inc.'s** ability to pay its interest expense. The following amounts (in thousands) are taken from Green Mountain's income statement.

	Year Ended September 28, 2013	Year Ended September 29, 2012
Net income	$ 483,232	$ 362,628
Income tax expense	256,771	212,641
Interest expense	18,177	22,983

Green Mountain's times-interest-earned ratios for the years ended September 28, 2013, and September 29, 2012, are calculated as follows:

Times-interest-earned ratio = (Net income + Income tax expense + Interest expense) / Interest expense

2013

= ($483,232 + $256,771 + $18,177) / $18,177
= 41.71 (rounded)

2012

= ($362,628 + $212,641 + $22,983) / $22,983
= 26.03 (rounded)

Notice that from 2012 to 2013, Green Mountain experienced a decrease in interest expense. This is because Green Mountain incurred less debt specifically in its revolving line of credit. This decrease in debt increases Green Mountain's times-interest-earned ratio from 26.03 to 41.71. It would appear that Green Mountain can easily cover its interest expense.

Try It!

9. Fitzgerald Company reported the following amounts on its 2016 income statement:

	Year Ended December 31, 2016
Net income	$ 19,300
Income tax expense	5,800
Interest expense	900

What is Fitzgerald's times-interest-earned ratio for 2016? (Round your answer to two decimals.)

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S11-13. MyAccountingLab

REVIEW

> Things You Should Know

1. How are current liabilities of known amounts accounted for?

- Current liabilities are liabilities that must be paid with cash or with goods and services within one year or within the entity's operating cycle if the cycle is longer than a year.
- Some examples of current liabilities are accounts payable, sales tax payable, income tax payable, unearned revenues, and short-term notes payable.
- Current liabilities also include any current portion of long-term notes payable.

2. How do companies account for and record payroll?

- Gross pay is the total amount of salary or wages earned by the employee. Net pay is the amount that each employee gets to keep (take-home pay).
- Payroll withholding deductions are the difference between gross pay and net pay. Examples of payroll deductions that *employees* pay include:
    - Income tax withholding: federal, state, and local income tax
    - Employee FICA tax
        - OASDI: 6.2% on the first $117,000 of annual earnings
        - Medicare: 1.45% on earnings up to $200,000, 2.35% on all earnings above $200,000
    - Optional withholdings: charitable contributions, union dues, and so on
- A payroll register can be used to help summarize the earnings, withholdings, and net pay for each employee.
- Businesses record a journal entry for payroll and payroll withholdings as a debit to Salaries and Wages Expense and a credit to various liabilities until the amounts are paid.

- *Employers* must pay at least three payroll taxes:
  - Employer FICA tax
    - OASDI: 6.2% on the first $117,000 of each employee's annual earnings
    - Medicare: 1.45% on all earnings
  - State unemployment compensation tax (SUTA): varies by state; we will use 5.4% on the first $7,000 of each employee's annual earnings
  - Federal unemployment compensation tax (FUTA): 0.6% on the first $7,000 of each employee's annual earnings
- Payroll taxes are recorded as a debit to Payroll Tax Expense and a credit to various liabilities until they are paid.
- Internal control over payroll involves efficiency and safeguarding of payroll disbursements.

3. How are current liabilities that must be estimated accounted for?

- Bonuses are based on meeting a specific goal and are considered liabilities (Employee Bonus Payable) until paid.
- Vacation, health, and pension benefits must be estimated and recorded as liabilities until paid.
- Warranty Expense (DR) and Estimated Warranty Payable (CR) must be recorded in the same period that the company records the revenue related to the warranty.
- As warranties are honored, the Estimated Warranty Payable account is reduced.

4. How are contingent liabilities accounted for?

- A contingent liability is a potential liability that depends on some future event.
- Accounting for contingent liabilities is based on the following likelihoods:
  - Remote: Do not disclose.
  - Reasonably possible: Describe the situation in a note to the financial statements.
  - Probable and the amount of loss *cannot* be estimated: Describe the situation in a note to the financial statements.
  - Probable and the amount of the loss *can* be estimated: Record an expense and a liability based on estimated amounts.

5. How do we use the times-interest-earned ratio to evaluate business performance?

- The times-interest-earned ratio is calculated as (Net income + Income tax expense + Interest expense) / Interest expense.
- It measures the number of times earnings before interest and taxes (EBIT) can cover (pay) interest expense.

> Summary Problem 11-1

Answer each question independently.

Requirements

1. A restaurant made cash sales of $4,000 subject to a 5% sales tax. Record the sales and the related sales tax. Also record the payment of the tax to the state.

2. On October 1, 2016, Rhodes Company purchased equipment at a cost of $10,000, signing a nine-month, 8% note payable for that amount. Record the October 1 purchase. Also record the adjusting entry needed on December 31, 2016, and payment of the note plus interest at maturity on July 1, 2017.
3. How does a contingent liability differ from a known liability? When would a contingent liability be journalized?

> Solution

Requirement 1

Date	Accounts and Explanation	Debit	Credit
	Cash	4,200	
	Sales Revenue		4,000
	Sales Tax Payable ($4,000 × 0.05)		200
	To record cash sales and the related sales tax.		
	Sales Tax Payable	200	
	Cash		200
	To record cash payment for sales tax payable.		

Requirement 2

Date	Accounts and Explanation	Debit	Credit
2016			
Oct. 1	Equipment	10,000	
	Notes Payable		10,000
	Purchased equipment in exchange for nine-month, 8% note.		
Dec. 31	Interest Expense ($10,000 × 0.08 × 3/12)	200	
	Interest Payable		200
	Accrued interest expense at year-end.		
2017			
Jul. 1	Notes Payable	10,000	
	Interest Expense ($10,000 × 0.08 × 6/12)	400	
	Interest Payable	200	
	Cash		10,600
	Paid note and interest at maturity.		

Requirement 3

A contingent liability is a *potential*, rather than an actual, liability because it depends on a future event. Some event must happen (the contingency) for a contingent liability to have to be paid. Contingent liabilities are journalized when the likelihood of an actual loss is *probable* and the amount of the expense can be reasonably estimated.

> Summary Problem 11-2

Rags-to-Riches, a clothing resale store, employs one salesperson, Dee Hunter. Hunter's straight-time wage is $10 per hour, with time-and-a-half pay for hours above 40. Rags-to-Riches withholds income tax (20%), FICA—OASDI (6.2%), and FICA—Medicare (1.45%) from Hunter's pay. Rags-to-Riches also pays payroll taxes for FICA—OASDI (6.2%), FICA—Medicare (1.45%), and state and federal unemployment (5.4% and 0.6%, respectively).

During the week ended December 26, Hunter worked 50 hours. Prior to this week, she had earned $2,000.

Requirements

(Round all amounts to the nearest dollar.)

1. Compute Hunter's gross pay and net (take-home) pay for the week.
2. Record the payroll entries that Rags-to-Riches would make for each of the following:
   a. Salaries and wages expense and payment related to Hunter
   b. Employer payroll taxes accrual related to Hunter
   c. Payment of all payroll taxes (employee and employer related)
3. How much was Rags-to-Riches's total payroll expense for the week?

> Solution

Requirement 1

Gross pay:		
Straight-time pay (40 hours × $10/hour)		$ 400
Overtime pay:		
Rate per hour ($10 × 1.5)	$ 15	
Hours (50 hours − 40 hours)	× 10	
		150
Gross pay		$ 550
Net pay:		
Gross pay		$ 550
Withholding deductions:		
Employee income tax ($550 × 0.20)	$ 110	
Employee OASDI ($550 × 0.062)	34	
Employee Medicare ($550 × 0.0145)	8	
Total withholdings		152
Net (take-home) pay		$ 398

Requirement 2

Date	Accounts and Explanation	Debit	Credit
a.	Salaries and Wages Expense	550	
	FICA—OASDI Taxes Payable		34
	FICA—Medicare Taxes Payable		8
	Employee Income Taxes Payable		110
	Salaries and Wages Payable		398
	To record salaries and wages expense and payroll withholdings.		
	Salaries and Wages Payable	398	
	Cash		398
	To record payment of salaries and wages.		
b.	Payroll Tax Expense	75	
	FICA—OASDI Taxes Payable ($550 × 0.062)		34
	FICA—Medicare Taxes Payable ($550 × 0.0145)		8
	Federal Unemployment Taxes Payable ($550 × 0.006)		3
	State Unemployment Taxes Payable ($550 × 0.054)		30
	To record employer's payroll tax expense.		
c.	FICA—OASDI Taxes Payable ($34 + $34)	68	
	FICA—Medicare Taxes Payable ($8 + $8)	16	
	Employee Income Taxes Payable	110	
	Federal Unemployment Taxes Payable	3	
	State Unemployment Taxes Payable	30	
	Cash		227
	To record payment of payroll tax liabilities.		

Requirement 3

Rags-to-Riches incurred *total payroll expense* of $625 (gross pay of $550 + payroll tax expense of $75).

> Key Terms

Contingent Liability (p. 595)
Current Liability (p. 580)
Current Portion of Notes Payable (p. 584)
Federal Insurance Contributions Act (FICA) (p. 586)
Gross Pay (p. 585)
Income Tax Withholding (p. 586)
Liabilities (p. 580)
Long-Term Liability (p. 580)
Net Pay (p. 585)
Payroll Register (p. 588)
Pension Plan (p. 593)
Short-Term Note Payable (p. 582)
Social Security (FICA) Tax (p. 586)
Times-Interest-Earned Ratio (p. 597)
Unemployment Compensation Tax (p. 590)
Warranty (p. 593)

> Quick Check

Learning Objective 1

1. Known liabilities of estimated amounts are
   - **a.** ignored. (Record them when paid.)
   - **b.** reported on the balance sheet.
   - **c.** reported on the income statement.
   - **d.** reported only in the notes to the financial statements.

Learning Objective 1

2. On January 1, 2016, a business borrowed $18,000 on a five-year, 5% note payable. At December 31, 2016, the business should *record*
   - **a.** interest payable of $900.
   - **b.** note receivable of $18,000.
   - **c.** cash payment of $18,000.
   - **d.** nothing. (The note is already on the books.)

Learning Objective 1

3. A company sells $180,000 (selling price) of goods and collects sales tax of 8%. What current liability does the sale create?
   - **a.** Sales tax payable of $14,400
   - **b.** Sales revenue of $194,400
   - **c.** Unearned revenue of $14,400
   - **d.** None; the company collected cash up front.

Learning Objective 1

4. Jade Larson Antiques owes $20,000 on a truck purchased for use in the business. Assume the company makes timely principal payments of $5,000 each year at December 31 plus interest at 8%. Which of the following is true?
   - **a.** After the first payment is made, the company owes $15,000 plus three years' interest.
   - **b.** After the first payment, $15,000 would be shown as a long-term liability.
   - **c.** After the first payment is made, $5,000 would be shown as the current portion due on the long-term note.
   - **d.** Just before the last payment is made, $5,000 will appear as a long-term liability on the balance sheet.

Learning Objective 2

5. An employee has year-to-date earnings of $113,900. The employee's gross pay for the next pay period is $5,000. If the FICA—OASDI is 6.2% and the wage base is $117,000, how much FICA—OASDI tax will be withheld from the employee's pay? (Answer is rounded to whole dollar.)
   - **a.** $192
   - **b.** $210
   - **c.** $310
   - **d.** $73

Learning Objective 2

6. The employer is responsible for which of the following payroll taxes?
   - **a.** 6.2% FICA—OASDI tax
   - **b.** 1.45% FICA—Medicare tax
   - **c.** Federal and state unemployment taxes
   - **d.** All of the above

Learning Objective 3

7. Wells Electric (WE) owed Estimated Warranty Payable of $1,200 at the end of 2015. During 2016, WE made sales of $120,000 and expects product warranties to cost the company 3% of the sales. During 2016, WE paid $2,300 for warranties. What is WE's Estimated Warranty Payable at the end of 2016?
   - **a.** $2,300
   - **b.** $2,500
   - **c.** $3,600
   - **d.** $4,800

Learning Objective 3

8. Vega Company expects to pay a 4% bonus on net income of $130,000 after deducting the bonus. The journal entry to record the accrued bonus includes
   a. a debit to Employee Bonus Payable, $5,000.
   b. a debit to Employee Bonus Expense, $5,200.
   c. a credit to Employee Bonus Payable, $5,000.
   d. a credit to Cash, $5,200.

Learning Objective 4

9. Swell Company has a lawsuit pending from a customer claiming damages of $100,000. Swell's attorney advises that the likelihood the customer will win is remote. GAAP requires at a minimum that this contingent liability be
   a. disclosed in the footnotes.
   b. disclosed in the footnotes, with ranges of potential loss.
   c. recorded as a journal entry, as well as disclosed in the footnotes.
   d. No disclosure is required.

Learning Objective 5

10. McDaniel and Associates reported the following amounts on its 2016 income statement:

	Year Ended December 31, 2016
Net income	$ 60,500
Income tax expense	12,100
Interest expense	5,000

What was McDaniel's times-interest-earned ratio for 2016?

a. 12.10
b. 15.52
c. 13.10
d. 14.52

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What are the three main characteristics of liabilities?
2. What is a current liability? Provide some examples of current liabilities.
3. How is sales tax recorded? Is it considered an expense of a business? Why or why not?
4. How do unearned revenues arise?
5. What do short-term notes payable represent?
6. Coltrane Company has a $5,000 note payable that is paid in $1,000 installments over five years. How would the portion that must be paid within the next year be reported on the balance sheet?
7. What is the difference between gross pay and net pay?

8. List the required employee payroll withholding deductions, and provide the tax rate for each.
9. How might a business use a payroll register?
10. What payroll taxes is the employer responsible for paying?
11. What are the two main controls for payroll? Provide an example of each.
12. When do businesses record warranty expense, and why?
13. What is a contingent liability? Provide some examples of contingencies.
14. Curtis Company is facing a potential lawsuit. Curtis's lawyers think that it is reasonably possible that it will lose the lawsuit. How should Curtis report this lawsuit?
15. How is the times-interest-earned ratio calculated, and what does it evaluate?

> Short Exercises

For all payroll calculations, use the following tax rates and round amounts to the nearest cent.

Employee: OASDI: 6.2% on first $117,000 earned; Medicare: 1.45% up to $200,000, 2.35% on earnings above $200,000.

Employer: OASDI: 6.2% on first $117,000 earned; Medicare: 1.45%; FUTA: 0.6% on first $7,000 earned; SUTA: 5.4% on first $7,000 earned.

S11-1 Determining current versus long-term liabilities

Learning Objective 1

Rios Raft Company had the following liabilities.

- **a.** Accounts Payable
- **b.** Note Payable due in 3 years
- **c.** Salaries Payable
- **d.** Note Payable due in 6 months
- **e.** Sales Tax Payable
- **f.** Unearned Revenue due in 8 months
- **g.** Income Tax Payable

Determine whether each liability would be considered a current liability (CL) or a long-term liability (LTL).

S11-2 Recording sales tax

Learning Objective 1

On July 5, Fawn Company recorded sales of merchandise inventory on account, $15,000. The sales were subject to sales tax of 6%. On August 15, Fawn Company paid $300 of sales tax to the state.

Requirements

1. Journalize the transaction to record the sale on July 5. Ignore cost of goods sold.
2. Journalize the transaction to record the payment of sales tax to the state.

S11-3 Recording unearned revenue

Learning Objective 1

On March 1, *Gardening Green Magazine* collected cash of $54,000 on future annual subscriptions starting on April 1.

Requirements

1. Journalize the transaction to record the collection of cash on March 1.
2. Journalize the transaction required at December 31, the magazine's year-end, assuming no revenue earned has been recorded.

Learning Objective 1

S11-4 Accounting for a note payable

On December 31, 2015, Cimmaron purchased $10,000 of merchandise inventory on a one-year, 10% note payable. Cimmaron uses a perpetual inventory system

Requirements

1. Journalize the company's purchase of merchandise inventory on December 31, 2015.
2. Journalize the company's accrual of interest expense on June 30, 2016, its fiscal year-end.
3. Journalize the company's payment of the note plus interest on December 31, 2016.

Learning Objective 1

S11-5 Determining current portion of long-term note payable

On January 1, Jamison Company purchased equipment of $240,000 with a long-term note payable. The debt is payable in annual installments of $48,000 due on December 31 of each year. At the date of purchase, how will Jamison Company report the note payable?

Learning Objective 2

S11-6 Computing and journalizing an employee's total pay

Lucy Barber works at College of Portland and is paid $30 per hour for a 40-hour workweek and time-and-a-half for hours above 40.

Requirements

1. Compute Barber's gross pay for working 62 hours during the first week of February.
2. Barber is single, and her income tax withholding is 10% of total pay. Barber's only payroll deductions are payroll taxes. Compute Barber's net (take-home) pay for the week. Assume Barber's earnings to date are less than the OASDI limit.
3. Journalize the accrual of salaries and wages expense and the payments related to the employment of Lucy Barber.

Learning Objective 2

S11-7 Computing payroll amounts considering FICA tax ceilings

Brooke Clover works for JDK all year and earns a monthly salary of $11,900. There is no overtime pay. Brooke's income tax withholding rate is 10% of gross pay. In addition to payroll taxes, Brooke elects to contribute 1% monthly to United Way. JDK also deducts $250 monthly for co-payment of the health insurance premium. As of September 30, Brooke had $107,100 of cumulative earnings.

Requirements

1. Compute Brooke's net pay for October.
2. Journalize the accrual of salaries expense and the payments related to the employment of Brooke Clover.

S11-8 Computing and journalizing the payroll expense of an employer

Learning Objective 2

Berry Company has monthly salaries of $12,000. Assume Berry pays all the standard payroll taxes and no employees have reached the payroll tax limits. Journalize the accrual and payment of employer payroll taxes for Berry Company.

S11-9 Computing bonus payable

Learning Objective 3

On December 31, Domino Company estimates that it will pay its employees a 2% bonus on $58,000 of net income after deducting the bonus. The bonus will be paid on January 15 of the next year

Requirements

1. Journalize the December 31 transaction for Domino
2. Journalize the payment of the bonus on January 15.

S11-10 Journalizing vacation benefits

Learning Objective 3

Roy Industries has four employees. Each employee earns one vacation day a month. Roy pays its employees a weekly salary of $2,000 for a five-day workweek.

Requirements

1. Determine the amount of vacation expense for one month.
2. Journalize the entry to accrue the vacation expense for the month.

S11-11 Accounting for warranty expense and warranty payable

Learning Objective 3

Barnstormers Corrector guarantees its snowmobiles for three years. Company experience indicates that warranty costs will be approximately 7% of sales.

Assume that the Barnstormers dealer in Colorado Springs made sales totaling $450,000 during 2016. The company received cash for 20% of the sales and notes receivable for the remainder. Warranty payments totaled $10,000 during 2016.

Requirements

1. Record the sales, warranty expense, and warranty payments for the company. Ignore cost of goods sold.
2. Post to the Estimated Warranty Payable T-account. At the end of 2016, how much in Estimated Warranty Payable does the company owe? Assume the Estimated Warranty Payable is $0 on January 1, 2016.

S11-12 Accounting treatment for contingencies

Learning Objective 4

Fernandez Motors, a motorcycle manufacturer, had the following contingencies.

a. Fernandez estimates that it is reasonably possible but not likely that it will lose a current lawsuit. Fernandez's attorneys estimate the potential loss will be $3,200,000.

b. Fernandez received notice that it was being sued. Fernandez considers this lawsuit to be frivolous.

c. Fernandez is currently the defendant in a lawsuit. Fernandez believes it is likely that it will lose the lawsuit and estimates the damages to be paid will be $60,000.

Determine the appropriate accounting treatment for each of the situations Fernandez is facing.

Learning Objective 5

S11-13 Computing times-interest-earned ratio

Brentwood Electronics reported the following amounts on its 2016 income statement:

Year Ended December 31, 2016	
Net income	$ 44,000
Income tax expense	6,600
Interest expense	2,500

What is Brentwood's times-interest-earned ratio for 2016? (Round the answer to two decimals.)

> Exercises

Learning Objective 1

Sales Tax Payable $8,500

E11-14 Recording sales tax

Consider the following transactions of Moore Software:

Mar. 31	Recorded cash sales of $160,000, plus sales tax of 10% collected for the state of New Jersey
Apr. 6	Sent March sales tax to the state.

Journalize the transactions for the company. Ignore cost of goods sold.

Learning Objective 1

May 1, 2016 Interest Expense $120

E11-15 Recording note payable transactions

Consider the following note payable transactions of Cabico Video Productions.

2015	
Jul. 1	Purchased equipment costing $10,000 by issuing a one-year, 6% note payable.
Dec. 31	Accrued interest on the note payable.
2016	
Jul. 1	Paid the note payable plus interest at maturity.

Journalize the transactions for the company.

Learning Objective 1

Dec. 31 Subscription Revenue $150

E11-16 Recording and reporting current liabilities

Travis Publishing completed the following transactions during 2016:

Oct. 1	Sold a six-month subscription (starting on November 1), collecting cash of $390, plus sales tax of 6%.
Nov. 15	Remitted (paid) the sales tax to the state of Tennessee.
Dec. 31	Made the necessary adjustment at year-end to record the amount of subscription revenue earned during the year.

Journalize the transactions (explanations are not required).

E11-17 Journalizing current liabilities

Learning Objectives 1, 2

Salaries Expense $3,100

Erik O'Hern Associates reported short-term notes payable and salaries payable as follows:

	2016	2015
Current Liabilities—partial:		
Short-Term Notes Payable	$ 16,800	$ 15,200
Salaries Payable	3,100	3,900

During 2016, O'Hern paid off both current liabilities that were left over from 2015, borrowed money on short-term notes payable, and accrued salaries expense. Journalize all four of these transactions for O'Hern during 2016. Assume no interest on short-term notes payable of $15,200.

E11-18 Computing and recording gross and net pay

Learning Objective 2

1. Net Pay $362.44

Herbert Simpson manages a Dairy World drive-in. His straight-time pay is $9 per hour, with time-and-a-half for hours in excess of 40 per week. Simpson's payroll deductions include withheld income tax of 20%, FICA tax, and a weekly deduction of $8 for a charitable contribution to United Way. Simpson worked 59 hours during the week.

Requirements

1. Compute Simpson's gross pay and net pay for the week. Assume earnings to date are $9,000.
2. Journalize Dairy World's wages expense accrual for Simpson's work. An explanation is not required.
3. Journalize the subsequent payment of wages to Simpson.

E11-19 Recording employer payroll taxes and employee benefits

Learning Objective 2

Payroll Tax Expense $6,135.00

Diablo's Mexican Restaurant incurred salaries expense of $67,000 for 2016. The payroll expense includes employer FICA tax, in addition to state unemployment tax and federal unemployment tax. Of the total salaries, $24,000 is subject to unemployment tax. Also, the company provides the following benefits for employees: health insurance (cost to the company, $2,200), life insurance (cost to the company, $390), and retirement benefits (cost to the company, 7% of salaries expense). Journalize Diablo's expenses for employee benefits and for payroll taxes. Explanations are not required.

Learning Objective 2

2. Salaries & Wages Payable $17,060.10

E11-20 Recording employee and employer payroll taxes

Brook Company had the following partially completed payroll register:

Earnings			Withholdings								
Beginning Cumulative Earnings	Current Period Earnings	Ending Cumulative Earnings	OASDI	Medicare	Income Tax	Health Insurance	United Way	Total Withholdings	Net Pay	Check No.	Salaries and Wages Expense
$ 83,000	$ 4,100				$ 820	$ 82	$ 15			801	
112,000	7,600				1,520	152	25			802	
35,000	2,500				500	50	0			803	
62,500	4,900				980	98	50			804	
0	1,000				200	20	0			805	
$ 292,500	$ 20,100				$ 4,020	$ 402	$ 90				

Requirements

1. Complete the payroll register.
2. Journalize Brook's wages expense accrual for the current pay period.
3. Journalize Brook's expenses for employer payroll taxes for the current pay period.

Learning Objective 3

1. Warranty Expense $14,000

E11-21 Accounting for warranty expense and warranty payable

The accounting records of Sculpted Ceramics included the following at January 1, 2016:

Estimated Warranty Payable	
	3,000 Beg. Bal.

In the past, Earth and Clay's warranty expense has been 9% of sales. During 2016, Earth and Clay made sales paid $124,000 and paid $8,000 to satisfy warranty claims.

Requirements

1. Journalize Earth and Clay's warranty expense and warranty payments during 2016. Explanations are not required.
2. What balance of Estimated Warranty Payable will Earth and Clay report on its balance sheet at December 31, 2016?

Learning Objective 3

Dec. 31 Employee Bonus Expense $3,283.02

E11-22 Accounting for warranties, vacation, and bonuses

McGaffey Industries completed the following transactions during 2016:

Nov. 1	Made sales of $16,000. McGaffey estimates that warranty expense is 5% of sales. (Record only the warranty expense.)
20	Paid $500 to satisfy warranty claims.
Dec. 31	Estimated vacation benefits expense to be $6,000.
31	McGaffey expected to pay its employees a 5% bonus on net income after deducting the bonus. Net income for the year is $62,000.

Journalize the transactions (explanations are not required).

E11-23 Accounting treatment for contingencies

Learning Objective 4

Analyze the following independent situations.

- **a.** Sophia, Inc. is being sued by a former employee. Sophia believes that there is a remote chance that the employee will win. The employee is suing Sophia for damages of $5,000.
- **b.** Oro Oil Refinery had a gas explosion on one of its oil rigs. Oro believes it is likely that it will have to pay environmental clean-up costs and damages in the future due to the gas explosion. Oro cannot estimate the amount of the damages.
- **c.** Lucky Enterprises estimates that it will have to pay $30,000 in warranty repairs next year.

Determine how each contingency should be treated.

E11-24 Computing times-interest-earned ratio

Learning Objective 5

1. Jameson Ratio 120.3 times

The following financial information was obtained from the year ended 2016 income statements for Johnson Automotive and Stanley Automotive:

	Johnson	Stanley
Net income	$ 43,210	$ 86,420
Income tax expense	12,320	22,330
Interest expense	450	2,900

Requirements

1. Compute the times-interest-earned ratio for each company.
2. Which company was better able to cover its interest expense?

> Problems Group A

P11-25A Journalizing and posting liabilities

Learning Objectives 1, 2

1d. Rent Revenue $2,500

The general ledger of Prompt Ship at June 30, 2016, the end of the company's fiscal year, includes the following account balances before payroll and adjusting entries.

Accounts Payable	$ 110,000
Interest Payable	0
Salaries Payable	0
Employee Income Taxes Payable	0
FICA—OASDI Taxes Payable	0
FICA—Medicare Taxes Payable	0
Federal Unemployment Taxes Payable	0
State Unemployment Taxes Payable	0
Unearned Rent Revenue	6,600
Long-term Notes Payable	240,000

The additional data needed to develop the payroll and adjusting entries at June 30 are as follows:

a. The long-term debt is payable in annual installments of $48,000, with the next installment due on July 31. On that date, Prompt Ship will also pay one year's interest at 8%. Interest was paid on July 31 of the preceding year. Make the adjusting entry to accrue interest expense at year-end.

b. Gross unpaid salaries for the last payroll of the fiscal year were $4,800. Assume that employee income taxes withheld are $970 and that all earninqs are subject to OASDI.

c. Record the associated employer taxes payable for the last payroll of the fiscal year, $4,800. Assume that the earnings are not subject to unemployment.

d. On February 1, the company collected one year's rent of $6,600 in advance.

Requirements

1. Using the T-accounts opened for you, insert the unadjusted June 30 balances.
2. Journalize and post the June 30 payroll and adjusting entries to the accounts. Identify each adjusting entry by letter.
3. Prepare the current liabilities section of the balance sheet at June 30, 2016.

Learning Objective 2

1. Net Pay $164,641

P11-26A Computing and journalizing payroll amounts

Larry Walsh is general manager of Moonwalk Salons. During 2016, Walsh worked for the company all year at a $11,800 monthly salary. He also earned a year-end bonus equal to 20% of his annual salary.

Walsh's federal income tax withheld during 2016 was $1,770 per month, plus $4,248 on his bonus check. State income tax withheld came to $90 per month, plus $70 on the bonus. FICA tax was withheld on the annual earnings. Walsh authorized the following payroll deductions: Charity Fund contribution of 2% of total earnings and life insurance of $30 per month.

Moonwalk incurred payroll tax expense on Walsh for FICA tax. The company also paid state unemployment tax and federal unemployment tax.

Requirements

1. Compute Walsh's gross pay, payroll deductions, and net pay for the full year 2016. Round all amounts to the nearest dollar.
2. Compute Moonwalk's total 2016 payroll expense for Walsh.
3. Make the journal entry to record Moonwalk's expense for Walsh's total earnings for the year, his payroll deductions, and net pay. Debit Salaries Expense and Bonus Expense as appropriate. Credit liability accounts for the payroll deductions and Cash for net pay. An explanation is not required.
4. Make the journal entry to record the accrual of Moonwalk's payroll tax expense for Walsh's total earnings.

P11-27A Journalizing liability transactions

Learning Objectives 1, 3

Jan. 29 Cash $17,490

The following transactions of Denver Pharmacies occurred during 2015 and 2016:

2015	
Jan. 9	Purchased computer equipment at a cost of $12,000, signing a six-month, 9% note payable for that amount.
29	Recorded the week's sales of $68,000, three-fourths on credit and one-fourth for cash. Sales amounts are subject to a 6% state sales tax. Ignore cost of goods sold.
Feb. 5	Sent the last week's sales tax to the state.
Jul. 9	Paid the six-month, 9% note, plus interest, at maturity.
Aug. 31	Purchased merchandise inventory for $15,000, siqninq a six-month, 9% note payable. The company uses the perpetual inventory system.
Dec. 31	Accrued warranty expense, which is estimated at 3% of sales of $610,000.
31	Accrued interest on all outstanding notes payable.
2016	
Feb. 29	Paid the six-month 9% note, plus interest, at maturity.

Journalize the transactions in Denver's general journal. Explanations are not required.

P11-28A Journalizing liability transactions

Learning Objectives 3, 4

1. June 30 Warranty Expense $8,400

The following transactions of Acer Downy occurred during 2016:

Apr. 30	Downy is party to a patent infringement lawsuit of $180,000. Downy's attorney is certain it is remote that Downy will lose this lawsuit.
Jun. 30	Estimated warranty expense at 3% of sales of $400,000.
Jul. 28	Warranty claims paid in the amount of $5,500.
Sep. 30	Downy is party to a lawsuit for copyright violation of $160,000. Downy's attorney advises that it is probable Downy will lose this lawsuit. The attorney estimates the loss at $160,000.
Dec. 31	Downy estimates warranty expense on sales for the second half of the year of $530,000 at 3%.

Requirements

1. Journalize required transactions, if any, in Downy's general journal. Explanations are not required.
2. What is the balance in Estimated Warranty Payable assuming a beginning balance of $0?

Learning Objective 5

1. Net Income $10,950

P11-29A Computing times-interest-earned ratio

The income statement for Pennsylvania Communications follows. Assume Pennsylvania Communications signed a 120-day, 6%, $12,000 note on June 1, 2016, and that this was the only note payable for the company.

PENNSYLVANIA COMMUNICATIONS
Income Statement
Year Ended July 31, 2016

Sales Revenue	$ 34,000	
Less: Sales Returns and Allowances	4,600	
Sales Discounts	3,200	
Net Sales Revenue		$ 26,200
Cost of Goods Sold		9,500
Gross Profit		16,700
Operating Expenses:		
Selling Expenses	720	
Administrative Expenses	1,400	
Total Operating Expenses		2,120
Operating Income		14,580
Other Revenues and (Expenses):		
Interest Expense	?	
Total Other Revenues and (Expenses)		?
Net Income before Income Tax Expense		?
Income Tax Expense		2,890
Net Income		$?

Requirements

1. Fill in the missing information for Pennsylvania's year ended July 31, 2016, income statement.
2. Compute the times-interest-earned ratio for the company.

> Problems Group B

P11-30B Journalizing and posting liabilities

Learning Objectives 1, 2

1d. Rent Revenue $2,625

The general ledger of U-R-Shipping at June 30, 2016, the end of the company's fiscal year, includes the following account balances before payroll and adjusting entries.

Accounts Payable	$ 116,000
Interest Payable	0
Salaries Payable	0
Employee Income Taxes Payable	0
FICA—OASDI Taxes Payable	0
FICA—Medicare Taxes Payable	0
Federal Unemployment Taxes Payable	0
State Unemployment Taxes Payable	0
Unearned Rent Revenue	5,400
Long-Term Notes Payable	180,000

The additional data needed to develop the payroll and adjusting entries at June 30 are as follows:

a. The long-term debt is payable in annual installments of $36,000, with the next installment du July 31. On that date, U-R-Shipping will also pay one year's interest at 8%. Interest was on July 31 of the preceding year. Make the adjusting entry to accrue interest expense at year-end.

b. Gross unpaid salaries for the last payroll of the fiscal year were $4,600. Assume that employ income taxes withheld are $980 and that all earnings are subject to OASDI.

c. Record the associated employer taxes payable for the last payroll of the fiscal year, $4,600. Assume that the earnings are not subject to unemployment.

d. On February 1, the company collected one year's rent of $5,400 in advance.

Requirements

1. Using the T-accounts opened for you, insert the unadjusted June 30 balances.
2. Journalize and post the June 30 payroll and adjusting entries to the accounts. Identify each adjusting entry by letter.
3. Prepare the current liabilities section of the balance sheet at June 30, 2016.

P11-31B Computing and journalizing payroll amounts

Learning Objective 2

1. Net Pay $156,895

Len Wilson is general manager of Moonwalk Salons. During 2016, Wilson worked for the company all year at a $12,200 monthly salary. He also earned a year-end bonus equal to 20% of his annual salary.

Wilson's federal income tax withheld during 2016 was $1,830 per month, plus $5,856 on his bonus check. State income tax withheld came to $160 per month, plus $70 on the bonus. FICA tax was withheld on the annual earnings. Wilson authorized the following payroll deductions: Charity Fund contribution of 3% of total earnings and life insurance of $10 per month

Moonwalk incurred payroll tax expense on Wilson for FICA tax. The company also paid state unemployment tax and federal unemployment tax.

Requirements

1. Compute Wilson's gross pay, payroll deductions, and net pay for the full year 2016. Round all amounts to the nearest dollar.
2. Compute Moonwalk's total 2016 payroll expense for Wilson.
3. Make the journal entry to record Moonwalk's expense for Wilson's total earnings for the year, payroll deductions, and net pay. Debit Salaries Expense and Bonus Expense as appropriate. Credit liability accounts for the payroll deductions and Cash for net pay. An explanation is not required.
4. Make the journal entry to record the accrual of Moonwalk's payroll tax expense for Wilson's total earnings.

Learning Objectives 1, 3

Jan. 29 Cash $18,285

P11-32B Journalizing liability transactions

The following transactions of Plymouth Pharmacies occurred during 2015 and 2016:

2015	
Jan. 9	Purchased computer equipment at a cost of $14,000, signing a six-month, 7% note payable for that amount.
29	Recorded the week's sales of $65,000, three-fourths on credit and one-fourth for cash. Sales amounts are subject to a 6% state sales tax. Ignore cost of goods sold.
Feb. 5	Sent the last week's sales tax to the state.
Jul. 9	Paid the six-month, 7% note, plus interest, at maturity.
Aug. 31	Purchased merchandise inventory for $15,000, siqninq a six-month, 10% note payable. The company uses the perpetual inventory system.
Dec. 31	Accrued warranty expense, which is estimated at 3% of sales of $609,000.
31	Accrued interest on all outstanding notes payable.
2016	
Feb. 29	Paid the six-month 10% note, plus interest, at maturity.

Journalize the transactions in Plymouth's general journal. Explanations are not required.

Learning Objectives 3, 4

1. June 30 Warranty Expense $18,000

P11-33B Journalizing liability transactions

The following transactions of Shane Bigelow occurred during 2016:

Apr. 30	Bigelow is party to a patent infringement lawsuit of $200,000. Bigelow's attorney is certain it is remote that Bigelow will lose this lawsuit.
Jun. 30	Estimated warranty expense at 3% of sales of $440,000.
Jul. 28	Warranty claims paid in the amount of $5,700.
Sep. 30	Bigelow is party to a lawsuit for copyright violation of $120,000. Bigelow's attorney advises that it is probable Bigelow will lose this lawsuit. The attorney estimates the loss at $120,000.
Dec. 31	Bigelow estimates warranty expense on sales for the second half of the year of $530,000 at 3%.

Requirements

1. Journalize required transactions, if any, in Bigelow's general journal. Explanations are not required.
2. What is the balance in Estimated Warranty Payable assuming a beginning balance of $0?

P11-34B Computing times-interest-earned ratio

Learning Objective 5

1. Net Income $5,790

The income statement for Virginia Communications follows. Assume Virginia Communications signed a 120-day, 6%, $6,000 note on June 1, 2016, and that this was the only note payable for the company.

VIRGINIA COMMUNICATIONS
Income Statement
Year Ended July 31, 2016

Sales Revenue	$ 27,000	
Less: Sales Returns and Allowances	4,700	
Sales Discounts	3,700	
Net Sales Revenue		$ 18,600
Cost of Goods Sold		8,000
Gross Profit		10,600
Operating Expenses:		
Selling Expenses	650	
Administrative Expenses	1,600	
Total Operating Expenses		2,250
Operating Income		8,350
Other Revenues and (Expenses):		
Interest Expense	?	
Total Other Revenues and (Expenses)		?
Net Income before Income Tax Expense		?
Income Tax Expense		1,660
Net Income		$?

Requirements

1. Fill in the missing information for Virginia's year ended July 31, 2016, income statement.
2. Compute the times-interest-earned ratio for the company.

> Continuing Problem

P11-35 Accounting for liabilities of a known amount

This problem continues the Daniels Consulting situation from Problem P10-23 of Chapter 10. Daniels Consulting believes the company will need to borrow $300,000 in order to expand operations. Daniels consults the bank and secures a 6%, five-year note on March 1, 2017. Daniels must pay the bank principal in five equal installments plus interest annually on March 1.

Requirements

1. Record the $300,000 note payable on March 1, 2017.
2. Record the entry to accrue interest due on the note at December 31, 2017.
3. Record the entry Daniels would make to record the payment to the bank on March 1, 2018.

CRITICAL THINKING

> Decision Cases

Decision Case 11-1

Golden Bear Construction operates throughout California. The owner, Gaylan Beavers, employs 15 work crews. Construction supervisors report directly to Beavers, and the supervisors are trusted employees. The home office staff consists of an accountant and an office manager.

Because employee turnover is high in the construction industry, supervisors hire and fire their own crews. Supervisors notify the office of all personnel changes. Also, supervisors forward the employee W-4 forms to the home office. Each Thursday, the supervisors submit weekly time sheets for their crews, and the accountant prepares the payroll. At noon on Friday, the supervisors come to the office to get paychecks for distribution to the workers at 5 p.m.

The company accountant prepares the payroll, including the paychecks. Beavers signs all paychecks. To verify that each construction worker is a bona fide employee, the accountant matches the employee's endorsement signature on the back of the canceled paycheck with the signature on that employee's W-4 form.

Requirements

1. Identify one way that a supervisor can defraud Golden Bear Construction under the present system.
2. Discuss a control feature that the company can use to *safeguard* against the fraud you identified in Requirement 1.

Decision Case 11-2

Sell-Soft is the defendant in numerous lawsuits claiming unfair trade practices. Sell-Soft has strong incentives not to disclose these contingent liabilities. However, GAAP requires that companies report their contingent liabilities.

Requirements

1. Why would a company prefer *not* to disclose its contingent liabilities?
2. Describe how a bank could be harmed if a company seeking a loan did not disclose its contingent liabilities.
3. What ethical tightrope must companies walk when they report contingent liabilities?

> Ethical Issue 11-1

Many small businesses have to squeeze down costs any way they can just to survive. One way many businesses do this is by hiring workers as "independent contractors" rather than as regular employees. Unlike rules for regular employees, a business does not have to pay Social Security (FICA) taxes and unemployment insurance payments for independent contractors. Similarly, it does not have to withhold federal, state, or local income taxes or the employee's share of FICA taxes. The IRS has a "20 factor test" that determines whether a worker should be considered an employee or a contractor, but many businesses ignore those rules or interpret them loosely in their favor. When workers are treated as independent contractors, they do not get a W-2 form at tax time (they get a 1099 instead), they do not have any income taxes withheld, and they find themselves subject to "self-employment" taxes, by which they bear the brunt of both the employee's and the employer's shares of FICA taxes.

Requirements

1. When a business abuses this issue, how is the independent contractor hurt?
2. If a business takes an aggressive position—that is, interprets the law in a very slanted way—is there an ethical issue involved? Who is hurt?

> Financial Statement Case 11-1

Details about a company's liabilities appear in a number of places in the annual report. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's Annual Report. Use **Starbucks Corporation**'s fiscal 2013 financial statements to answer the following questions.

Requirements

1. Give the breakdown of Starbucks's current liabilities at September 29, 2013.
2. Calculate Starbucks's times-interest-earned ratio for the year ending September 30, 2012.

> Communication Activity 11-1

In 150 words or fewer, explain how contingent liabilities are accounted for.

> Quick Check Answers

1. b **2.** a **3.** a **4.** c **5.** a **6.** d **7.** b **8.** c **9.** d **10.** b

12

Long-Term Liabilities

Should the Business Take on Additional Debt?

Sophie Animations Studios, Inc. specializes in creating animated feature films for children and young-minded adults. The studio was started by founders Steve Lasseter and Lee Bird and has grown to produce many notable films. The corporation's stock is currently sold on a national stock exchange, and the company is widely respected for its consistent earnings each year.

The corporation plans on expanding its existing operations by building a new studio in Canada that will produce short movies and TV specials. In order to fund this expansion, the corporation is considering several options. One option is for the corporation to issue additional stock to raise the necessary cash. Another option is for the corporation to take on additional debt. As majority stockholders, Steve and Lee have expressed their concern over issuing additional shares of stock. The stockholders are concerned that the additional stock will decrease their ownership percentage in the corporation and also cause the market value of the stock to decrease. Due to these concerns, the corporation has decided that the best option would be to explore ways to secure the cash needed for expansion by taking on additional debt.

Sophie Animations Studios is currently evaluating different types of long-term liability options such as long-term notes payable and mortgages payable. These debts will most likely be secured by the studio building and will offer a reasonable interest rate and time period for repayment. In addition, Sophie Animations Studios is considering a special type of long-term liability, called a bonds payable. A bonds payable is issued on a bond market and typically provides a larger cash inflow than notes payable and mortgages payable do. In addition, bonds payable also often provide a longer time period for repayment, some even lasting for as long as 100 years. Each of these long-term liabilities is unique and offers advantages and disadvantages that Sophie Animations Studios needs to consider before it can begin the expansion.

Why Issue a 100-Year Bond Payable?

On July 21, 1993, the Walt Disney Company issued a long-term liability, specifically called a bonds payable, that would be payable in 100 years! These bonds were issued with an annual interest rate of 7.55%, and the principal of approximately $300 million was scheduled to be repaid in the year 2093. The Walt Disney Company is well known as an international family entertainment and media enterprise that includes broadcast networks, parks and resorts, the Walt Disney studios, consumer products, and interactive technology and games. Why would the Walt Disney Company issue a debt that wouldn't be paid back for 100 years? How are these types of long-term liabilities accounted for and reported on the balance sheet? In this chapter, you learn why companies might issue bonds payable and also how to account for other long-term liabilities, such as long-term notes payable and mortgages payable.

Chapter 12 Learning Objectives

1 Journalize transactions for long-term notes payable and mortgages payable
2 Describe bonds payable
3 Journalize transactions for bonds payable and interest expense using the straight-line amortization method
4 Journalize transactions to retire bonds payable
5 Report liabilities on the balance sheet
6 Use the debt to equity ratio to evaluate business performance
7 Use time value of money to compute the present value of future amounts (Appendix 12A)
8 Journalize transactions for bonds payable and interest expense using the effective-interest amortization method (Appendix 12B)

HOW ARE LONG-TERM NOTES PAYABLE AND MORTGAGES PAYABLE ACCOUNTED FOR?

You have learned that long-term liabilities are liabilities that do not need to be paid within one year or within the entity's operating cycle, whichever is longer. Both long-term notes payable and mortgages payable are common long-term liabilities.

Learning Objective 1
Journalize transactions for long-term notes payable and mortgages payable

Long-Term Notes Payable

Long-term notes payable are typically reported in the long-term liabilities section of the balance sheet. You learned about the current portion of long-term notes payable in a previous chapter. Now, let's focus on the long-term portion of the notes payable and the payments made according to the note contract.

Recall that most long-term notes payable are paid in installments. The *current portion of notes payable* is the principal amount that will be paid within one year—a current liability. The remaining portion is long-term. For example, Smart Touch Learning signed a $20,000 note payable on December 31, 2016. The note will be paid over four years with payments of $5,000 plus 6% interest due each December 31, beginning December 31, 2017. Remember that the current portion of the note, the amount due December 31, 2017, $5,000, is considered a current liability at December 31, 2016. We record the issuance of the note on December 31, 2016, in the following manner:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Cash	20,000	
	Notes Payable		20,000
	Received cash in exchange for a 4-year, 6% note.		

A↑		L↑	+	E
Cash↑	=	Notes Payable↑		

On December 31, 2017, Smart Touch Learning will make a $5,000 principal payment plus interest. Exhibit 12-1 (on the next page) shows an **amortization schedule** for the notes payable. An amortization schedule details each loan payment's allocation between principal and interest and also the beginning and ending balances of the loan. Using the calculation for interest that you have already learned, Smart Touch Learning will calculate interest expense

Amortization Schedule
A schedule that details each loan payment's allocation between principal and interest and the beginning and ending loan balances.

as beginning balance × interest rate × time. The total cash payment is the principal payment plus interest expense. Notice that at the end of the four years, Smart Touch Learning will have paid total interest of $3,000. Also notice that the interest expense decreases each year, as this expense is based on the principal, which is decreasing with each installment payment.

Exhibit 12-1 | **Long-Term Notes Payable Amortization Schedule**

	Beginning Balance	Principal Payment	Interest Expense	Total Payment	Ending Balance
12/31/2016					$ 20,000
12/31/2017	$ 20,000	$ 5,000	$ 1,200	$ 6,200	15,000
12/31/2018	15,000	5,000	900	5,900	10,000
12/31/2019	10,000	5,000	600	5,600	5,000
12/31/2020	5,000	5,000	300	5,300	0
Total		$ 20,000	$ 3,000	$ 23,000	

Beginning balance − Principal payment
= $20,000 − $5,000 = $15,000

Beginning balance × Interest rate × Time
= $20,000 × 0.06 × 1 year = $1,200

Principal payment + Interest expense
= $5,000 + $1,200 = $6,200

Assume it's now December 31, 2017, and Smart Touch Learning must make its first installment payment of $5,000 principal plus interest on the note. The company's accounting clerk will record the following entry:

$$\frac{\text{A}\downarrow}{\text{Cash}\downarrow}\Bigg\}=\Bigg\{\frac{\text{L}\downarrow}{\text{Notes Payable}\downarrow}+\frac{\text{E}\downarrow}{\text{Interest Expense}\uparrow}$$

Date	Accounts and Explanation	Debit	Credit
2017			
Dec. 31	Notes Payable	5,000	
	Interest Expense	1,200	
	Cash		6,200
	Paid principal and interest payment.		

After the December 31, 2017, entry, Smart Touch Learning owes $15,000 ($20,000 original note amount minus the $5,000 principal paid on December 31, 2017). The company will record similar entries for the three remaining payments using the amounts calculated in the amortization schedule.

Mortgages Payable

Mortgages Payable
Long-term debts that are backed with a security interest in specific property.

Mortgages payable include the borrower's promise to transfer the legal title to specific assets if the mortgage isn't paid on schedule. Mortgages payable are very similar to long-term notes payable. The main difference is the mortgages payable is secured with specific assets, whereas long-term notes are not secured with specific assets. Like long-term notes payable, the total mortgages payable amount has a portion due within one year (current) and a portion that is due more than one year from a specific date.

Commonly, mortgages specify a monthly payment of principal and interest to the lender (usually a bank). The most common type of mortgage is on property—for example, a mortgage on your home. Let's review an example.

Assume that on December 31, 2016, Smart Touch Learning purchases a building for $150,000, paying $49,925 in cash and signing a 30-year mortgage for $100,075, taken out at 6% interest that is payable in $600 monthly payments, which includes principal and interest, beginning January 31, 2017. The following entry is used to record this acquisition:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Building	150,000	
	Mortgages Payable		100,075
	Cash		49,925
	Purchased building with a mortgage payable and cash payment.		

A↑		**L↑**	+	**E**
Building↑ Cash↓	=	Mortgages Payable↑		

A partial amortization schedule for 2016 and 2017 is shown in Exhibit 12-2.

Exhibit 12-2 **Mortgages Payable Amortization Schedule**

	Beginning Balance	Principal Payment	Interest Expense	Total Payment	Ending Balance
12/31/2016					$ 100,075.00
01/31/2017	$ 100,075.00	$ 99.62	$ 500.38	$ 600.00	99,975.38
02/28/2017	99,975.38	100.12	499.88	600.00	99,875.26
03/31/2017	99,875.26	100.62	499.38	600.00	99,774.64
04/30/2017	99,774.64	101.13	498.87	600.00	99,673.51
05/31/2017	99,673.51	101.63	498.37	600.00	99,571.88
06/30/2017	99,571.88	102.14	497.86	600.00	99,469.74
07/31/2017	99,469.74	102.65	497.35	600.00	99,367.09
08/31/2017	99,367.09	103.16	496.84	600.00	99,263.93
09/30/2017	99,263.93	103.68	496.32	600.00	99,160.25
10/31/2017	99,160.25	104.20	495.80	600.00	99,056.05
11/30/2017	99,056.05	104.72	495.28	600.00	98,951.33
12/31/2017	98,951.33	105.24	494.76	600.00	98,846.09
Total		$ 1,228.91	$ 5,971.09	$ 7,200.00	

Beginning balance × Interest rate × Time
= $100,075 × 0.06 × 1/12 = $500.38

Total payment − Interest expense
= $600.00 − $500.38 = $99.62

Beginning balance − Principal payment
= $100,075.00 − $99.62 = $99,975.38

Notice that as time goes by the portion of the payment applied to principal increases and interest expense decreases.

We can confirm the interest calculations provided in the amortization table. So, for the first payment on the interest is calculated as $100,075.00 × 6% × 1/12, or $500.38. The principal of $99.62 is the difference between the monthly payment of $600.00 and the interest expense of $500.38 ($600.00 − $500.38 = $99.62). The $99.62 reduces the mortgages payable from $100,075.00 to $99,975.38 ($100,075.00 − $99.62 = $99,975.38). So, after reviewing the amortization schedule, Smart Touch Learning records the first mortgage payment as follows:

Date	Accounts and Explanation	Debit	Credit
2017			
Jan. 31	Mortgages Payable	99.62	
	Interest Expense	500.38	
	Cash		600.00
	Paid principal and interest payment.		

A↓		**L↓**	+	**E↓**
Cash↓	=	Mortgages Payable↓		Interest Expense↑

What is the difference between the mortgages payable amortization schedule and the long-term notes payable amortization schedule?

Each mortgage payment will be recorded in a similar journal entry, using the amortization schedule amounts.

Take a moment to review Exhibits 12-1 and 12-2. **In Exhibit 12-1, the principal payment stays the same and the total payment changes. In Exhibit 12-2, the principal payment varies while the total payment stays the same. Long-term liabilities can be structured either way—with an equal principal payment or equal total payment.** One thing that always changes, though, is the amount of interest expense each period. The amount of interest expense is always calculated on the beginning balance of the loan, and because the beginning balance of the loan is decreasing, the amount of interest expense also decreases.

Try It!

On January 1, 2016, Fox Corporation signed an $80,000, four-year, 4% note. The loan required Fox to make payments annually on December 31 of $20,000 principal plus interest.

1. Journalize the issuance of the note on January 1, 2016.
2. Journalize the first payment on December 31, 2016.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S12-1 and S12-2. MyAccountingLab

WHAT ARE BONDS?

Learning Objective 2
Describe bonds payable

Large companies need large amounts of money to finance their operations. They may take out long-term loans from banks and/or issue bonds payable to the public to raise the money. **Bonds payable** are long-term debts issued to multiple lenders called bondholders, usually in increments of $1,000 per bond. For example, a company could borrow $100,000 from one lender (the bank), or it could issue 100 bonds payable, each at $1,000, from 100 different lenders. By issuing bonds payable, companies can borrow millions of dollars from thousands of investors rather than depending on a loan from one single bank or lender. Each investor can buy a specified amount of the company's bonds.

Bond Payable
A long-term debt issued to multiple lenders called bondholders, usually in increments of $1,000 per bond.

Each bondholder gets a bond certificate that shows the name of the company that borrowed the money, exactly like a note payable. The certificate states the face value, which is the amount of the bond issue. The bond's face value is also called *maturity value*, *principal*, or *par value*. The company must then pay each bondholder the face value amount at a specific future date, called the maturity date.

People buy (invest in) bonds to earn interest. The bond certificate states the interest rate that the company will pay and the dates the interest is due, generally semiannually (twice per year). For example, a five-year, 9% bond issued at a face value of $100,000 on January 1, 2016 will pay 10 semiannual interest payments of $4,500 ($100,000 × 0.09 × 6/12) in addition to the face value payment at the maturity date. The cash flow pattern for a bond is as follows:

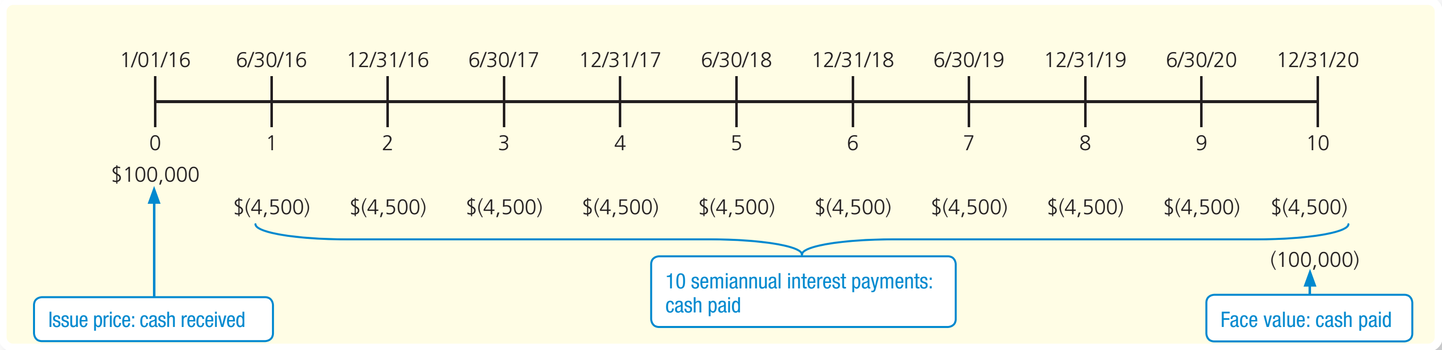


Exhibit 12-3 shows a bond certificate issued by Smart Touch Learning. Review the following bond fundamentals in the exhibit:

- **Face value**: The amount the borrower must pay back to the bondholders on the maturity date (also called *maturity value*, *principal amount*, or *par value*).

Face Value
The amount a borrower must pay back to the bondholders on the maturity date.

Exhibit 12-3 | Bond Certificate

UNITED STATES OF AMERICA ✣ STATE OF ILLINOIS

1000 1000

No. 12882 No. 12882

SMART TOUCH LEARNING, INC.

SMART TOUCH LEARNING, INC., a corporation of the State of Illinois (hereinafter called the "Company") for value received, hereby promise to pay to the bearer, or, if this bond be registered as to principal to the registered, owner, here of.

ON THE THIRTY FIRST DAY OF DECEMBER

2020

the sum of ONE THOUSAND DOLLARS ($1,000),

and to pay interest on such principal sum from the date hereof at the rate of NINE PER CENT

Jan 1, 2014 thru Dec 31, 2016
Jan 1, 2015 thru Dec 31, 2017
Jan 1, 2016 thru Dec 31, 2018
Jan 1, 2017 thru Dec 31, 2019

- **Maturity date**: The date on which the borrower must pay the principal amount to the bondholders.

Stated Interest Rate
The interest rate that determines the amount of cash interest the borrower pays and the investor receives each year.

- **Stated interest rate**: The interest rate that determines the amount of cash interest the borrower pays and the investor receives each year (also called *face rate*, *coupon rate*, or *nominal rate*).

Types of Bonds

There are various types of bonds, including the following:

Term Bonds
Bonds that all mature at the same time.

Serial Bonds
Bonds that mature in installments at regular intervals.

Secured Bonds
Bonds that give bondholders the right to take specified assets of the issuer if the issuer fails to pay principal or interest.

Debentures
Unsecured bonds backed only by the credit worthiness of the bond issuer.

- **Term bonds**—These bonds all mature at the same specified time. For example, $100,000 of term bonds may all mature five years from today.
- **Serial bonds**—Such bonds mature in installments at regular intervals. For example, a $500,000, five-year serial bond may mature in $100,000 annual installments over a five-year period.
- **Secured bonds**—These bonds give the bondholder the right to take specified assets of the issuer if the issuer fails to pay principal or interest.
- **Debentures**—Such bonds are unsecured bonds that are not backed by assets. They are backed only by the credit worthiness of the bond issuer.

Bond Prices

A bond can be issued at any price agreed upon by the issuer and the bondholders. A bond can be issued at any of the following:

Discount on Bonds Payable
Occurs when a bond's issue price is less than face value.

Premium on Bonds Payable
Occurs when a bond's issue price is more than face value.

- **Face value.** Occurs when a bond is issued at face value. Example: A $1,000 bond issued for $1,000.
- **Discount.** A **discount on bonds payable** occurs when the issue price is less than face value. Example: A $1,000 bond issued for $980. The discount is $20 ($1,000 − $980).
- **Premium.** A **premium on bonds payable** occurs when the issue price is above face value. Example: A $1,000 bond issued for $1,015. The premium is $15 ($1,015 − $1,000).

The issue price of a bond does not affect the required payment at maturity. In all of the preceding cases, the company must pay the face value of the bonds at the maturity date stated on the face of the bond.

After a bond is issued, investors may buy and sell it through the bond market just as they buy and sell stocks through the stock market. The most well-known bond market is the NYSE Bonds, which lists several thousand bonds.

Bond prices are quoted as a percentage of face value. For example:

- a $1,000 bond quoted at 100 is bought or sold for 100% of face value, $1,000 ($1,000 × 1.00).
- a $1,000 bond quoted at 88.375 is bought or sold for 88.375% of face value, $883.75 ($1,000 × 0.88375).
- a $1,000 bond quoted at 101.5 is bought or sold for 101.5% of face value, $1,015 ($1,000 × 1.015).

The issue price of a bond determines the amount of cash the company receives when it issues the bond. In all cases, the company must pay the bond's face value to retire it at the maturity date.

Exhibit 12-4 shows example price information for the bonds of Smart Touch Learning. On this particular day, 12 of Smart Touch Learning's 9% bonds maturing in 2021 (indicated by 21) were traded. The bonds' highest price on this day was $795 ($1,000 × 0.795). The lowest price of the day was $784.50 ($1,000 × 0.7845). The closing price (last sale of the day) was $795.

Exhibit 12-4 | **Bond Price Information**

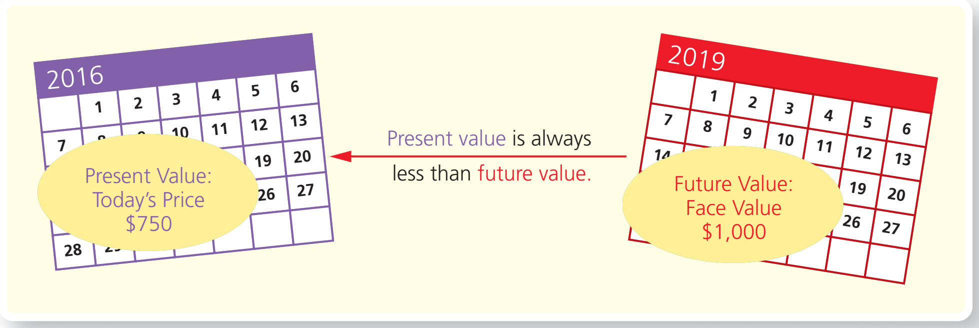
Bonds	Volume	High	Low	Close
SMT 9% of 21	12	79.5	78.45	79.5

Present Value

Money earns interest over time, a fact called the **time value of money**. Appendix 12A at the end of this chapter covers the time value of money in detail.

Time Value of Money
Recognition that money earns interest over time.

Let's see how the time value of money affects bond prices. Assume that a $1,000 bond reaches maturity three years from now and carries no interest. Would you pay $1,000 to purchase this bond? No, because paying $1,000 today to receive $1,000 later yields no interest on your investment. How much would you pay today in order to receive $1,000 in three years? The answer is some amount less than $1,000. Suppose $750 is a fair price. By investing $750 now to receive $1,000 later, you will earn $250 over the three years. The diagram that follows illustrates the relationship between a bond's price (present value) and its maturity amount (future value).



The amount that a person would invest *at the present time* is called the **present value**. The present value is the bond's market price. In our example, $750 is the present value (market price of the bond), and the $1,000 face value to be received in three years is the future amount. We show how to compute the present value of a future amount in Appendix 12A.

Present Value
The amount a person would invest now to receive a greater amount in the future.

Bond Interest Rates

Bonds are sold at their market price (issue price on the date the bonds are first sold), which is the present value of the interest payments the bondholder will receive while holding the bond plus the present value of the bond principal paid at the end of the bond's life. Two interest rates work together to set the price of a bond:

- The stated interest rate determines the amount of cash interest the borrower pays each year. The stated interest rate is printed on the bond and *does not change* from year to year. For example, Smart Touch Learning's 9% bonds payable have a stated interest rate of 9% (see Exhibit 12-3). Therefore, Smart Touch Learning pays $90 of interest annually on each $1,000 bond. The dollar amount of interest paid is not affected by the issue price of the bond.

Market Interest Rate
The interest rate that investors demand in order to loan their money.

- The **market interest rate** (also known as the *effective interest rate*) is the rate that investors demand to earn for loaning their money. The market interest rate *varies* constantly. A company may issue bonds with a stated interest rate that differs from the market interest rate, due to the time gap between the time the bonds were printed (engraved) showing the stated rate and the actual issuance of the bonds.

Smart Touch Learning may issue its 9% bonds when the market rate has risen to 10%. Will the Smart Touch Learning bonds attract investors in this market? No, because investors can earn 10% on other bonds. Therefore, investors will purchase Smart Touch Learning bonds only at a price *less* than face value. The difference between the lower price and the bonds' face value is a *discount* that will allow the investor to earn 10%, even though Smart Touch Learning's interest checks will be paid at the stated rate of 9%. The difference between what is paid for the bond (less than $1,000) and the bond principal of $1,000 is the interest rate difference between 9% and 10% over the life of the bond.

On the other hand, if the market interest rate is 8%, Smart Touch Learning's 9% bonds will be so attractive that investors will pay more than face value for them because investors will receive more in interest payments than expected. The difference between the higher price and face value is a *premium*. Exhibit 12-5 shows how the stated interest rate and the market interest rate work together to determine the price of a bond.

Exhibit 12-5 | **Interaction Between Stated Interest Rate, Market Rate, and Price of Bond**

Example: Bond with a Stated Interest Rate of 9%

Bond's Stated Interest Rate		Market Interest Rate		Issue Price of Bonds Payable
9%	=	9%	→	Face value of the bond
9%	<	10%	→	Discount (price below face value)
9%	>	8%	→	Premium (price above face value)

Why would a corporation issue bonds payable instead of issuing stock?

Issuing Bonds Versus Issuing Stock

Borrowing by issuing bonds payable carries a risk: The company may be unable to pay off the bonds and the related interest. Why do companies borrow instead of issuing stock? **Debt is a less expensive source of capital than stock, and bonds do not affect the percentage of ownership of the corporation.** Companies face the following decision: How shall we finance a new project—with bonds or with stock?

Suppose Smart Touch Learning has net income of $300,000 and 100,000 shares of common stock outstanding before it begins a new project. Smart Touch Learning needs $500,000 for the project, and the company is considering two plans:

- Plan 1 is to borrow $500,000 at 10% (issue $500,000 of 10% bonds payable).
- Plan 2 is to issue 50,000 shares of common stock for $500,000.

Smart Touch Learning management believes the new cash can be used to increase income before interest and taxes by $200,000 each year. The company estimates income tax expense to be 40%. Exhibit 12-6 shows the advantage of borrowing as it relates to earnings per share.

The earnings per share of stock is higher if Smart Touch Learning issues bonds. If all goes well, the company can earn more on the new project ($90,000) than the interest it pays on the bonds ($50,000). Earning more income on borrowed money than the related interest

Exhibit 12-6 | **Issuing Bonds Payable Versus Issuing Common Stock**

	Plan 1: Issue $500,000 of 10% Bonds Payable		Plan 2: Issue $500,000 of Common Stock	
Net income before new project		$ 300,000		$ 300,000
Expected income on the new project before interest and income tax expenses	$ 200,000		$ 200,000	
Less: Interest expense ($500,000 × 0.10)	50,000		0	
Project income before income tax	150,000		200,000	
Less: Income tax expense (40%)	60,000		80,000	
Project net income		90,000		120,000
Net income with new project		**$ 390,000**		**$ 420,000**
Earnings per share with new project:				
Plan 1 ($390,000 / 100,000 shares)		**$ 3.90**		
Plan 2 ($420,000 / 150,000 shares)				**$ 2.80**

expense is called **financial leverage**. It is widely used to increase earnings per share of common stock. Notice that, even though net income is higher under Plan 2, the earnings per share is lower. Why? Because the earnings must be shared among 50,000 more shares of stock.

Borrowing can increase the earnings per share, but borrowing has its disadvantages. Debts must be paid during unprofitable years as well as profitable years. A company might not have enough cash flow to make the interest payment, thereby defaulting on the debt. Unlike cash dividends, which are optional payments to stockholders, the interest payment on bonds payable is required. Without the cash necessary to make the interest payment, a company could have to declare bankruptcy.

Financial Leverage
Occurs when a company earns more income on borrowed money than the related interest expense.

Try It!

Determine whether the following bonds payable will be issued at face value, at a premium, or at a discount:

3. A 10% bonds payable is issued when the market interest rate is 8%.
4. A 10% bonds payable is issued when the market interest rate is 10%.
5. A 10% bonds payable is issued when the market interest rate is 12%.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S12-3 and S12-4. MyAccountingLab

HOW ARE BONDS PAYABLE ACCOUNTED FOR USING THE STRAIGHT-LINE AMORTIZATION METHOD?

The basic journal entry to record the issuance of bonds payable debits Cash and credits Bonds Payable. As noted previously, a company may issue bonds, a long-term liability, at *face value*, at a *discount*, or at a *premium*. We begin with the simplest case—issuing bonds payable at face value.

Learning Objective 3
Journalize transactions for bonds payable and interest expense using the straight-line amortization method

Issuing Bonds Payable at Face Value

Smart Touch Learning has $100,000 of 9% bonds payable that mature in five years. The company issues these bonds at face value on January 1, 2016. The issuance entry is as follows:

A↑		L↑	+	E
Cash↑	=	Bonds Payable↑		

Date	Accounts and Explanation	Debit	Credit
2016			
Jan. 1	Cash	100,000	
	Bonds Payable		100,000
	Issued bonds at face value.		

Smart Touch Learning, the borrower, makes this one-time journal entry to record the receipt of cash and issuance of bonds payable. Interest payments occur each June 30 and December 31. Smart Touch Learning's first semiannual interest payment is journalized as follows:

A↓		L	+	E↓
Cash↓	=			Interest Expense↑

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 30	Interest Expense ($100,000 × 0.09 × 6/12)	4,500	
	Cash		4,500
	Paid semiannual interest.		

Each semiannual interest payment follows this same pattern.

Issuing Bonds Payable at a Discount

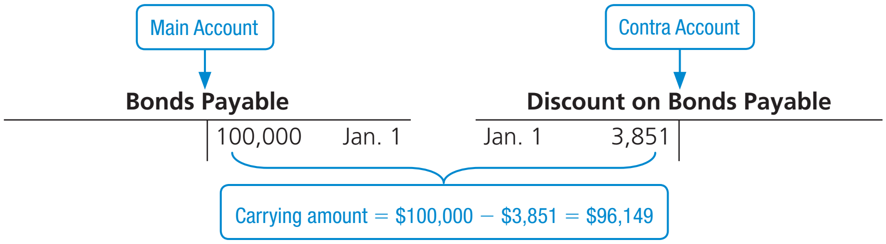
Now let's see how to issue bonds payable at a discount. This is one of the most common situations.

We know that market conditions may force a company such as Smart Touch Learning to accept a discounted price for its bonds. Suppose Smart Touch Learning issues $100,000 of its 9%, five-year bonds that pay interest semiannually when the market interest rate is 10%. The market price of the bonds drops to 96.149, which means 96.149% of face value. Smart Touch Learning receives $96,149 ($100,000 × 0.96149) at issuance and makes the following journal entry:

A↑		L↑	+	E
Cash↑	=	Bonds Payable↑ Discount on Bonds Payable↑		

Date	Accounts and Explanation	Debit	Credit
2016			
Jan. 1	Cash	96,149	
	Discount on Bonds Payable ($100,000 − $96,149)	3,851	
	Bonds Payable		100,000
	Issued bonds at a discount.		

After posting, the bond accounts have the following balances:



Discount on Bonds Payable is a contra account to Bonds Payable. Bonds Payable *minus* the discount gives the **carrying amount of bonds** (also known as *carrying value*). Smart Touch Learning would report these bonds payable on the balance sheet as follows immediately after issuance:

Carrying Amount of Bonds
A bond payable *minus* the discount account current balance or *plus* the premium account current balance.

Long-term Liabilities:		
Bonds Payable	$ 100,000	
Less: Discount on Bonds Payable	(3,851)	$ 96,149

Interest Expense on Bonds Payable Issued at a Discount

In this case, we see that a bond's stated interest rate differs from the market interest rate. The market rate was 10% when Smart Touch Learning issued its 9% bonds. This 1% interest rate difference created the $3,851 discount on the bonds. Smart Touch Learning needed to offer this discount because investors were willing to pay only $96,149 for the $100,000, 9% bonds when they could earn 10% on other bonds.

Smart Touch Learning borrowed $96,149 but still must pay $100,000 when the bonds mature five years later. What happens to the $3,851 discount? The discount is additional interest expense to Smart Touch Learning. The discount raises Smart Touch Learning's true interest expense on the bonds to the market interest rate of 10%. The discount becomes interest expense for Smart Touch Learning through a process called *amortization*, the gradual reduction of an item over time.

Straight-Line Amortization of Bond Discount

We can amortize a bond discount by dividing it into equal amounts for each interest period. This is called the **straight-line amortization method**. It works very much like the straight-line depreciation method we discussed in the Plant Assets chapter. In our example, the initial discount is $3,851 and there are 10 semiannual interest periods during the bonds' five-year life (5 year life × 2 interest payments per year). Therefore, 1/10 of the $3,851 bond discount ($385, rounded) is amortized each interest period. Smart Touch Learning's first semiannual interest entry is as follows:

Straight-Line Amortization Method
An amortization method that allocates an equal amount of bond discount or premium to each interest period over the life of the bond.

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 30	Interest Expense ($4,500 + $385)	4,885	
	Discount on Bonds Payable ($3,851 × 1/10)		385
	Cash ($100,000 × 0.09 × 6/12)		4,500
	Paid semiannual interest and amortized discount.		

A↓		**L↑**	+	**E↓**
Cash↓	=	Discount on Bonds Payable↓		Interest Expense↑

Interest expense of $4,885 for each six-month period is the sum of the following:

- Stated interest ($4,500, which is paid in cash)
- The amortization of discount, $385

This same entry would be made again on December 31, 2016. So, the bond discount balance would be $3,081 on December 31, 2016.

Bonds Payable

		100,000	Jan. 1

Discount on Bonds Payable

Jan. 1	3,851	385	Jun. 30
		385	Dec. 31
Bal.	3,081		

So, what would be the balance reported on the December 31, 2016, balance sheet for Bonds Payable?

Long-term Liabilities:		
Bonds Payable	$ 100,000	
Less: Discount on Bonds Payable	(3,081)	$ 96,919

Discount on Bonds Payable has a debit balance. Therefore, we credit the Discount on Bonds Payable account to amortize (reduce) its balance. Ten amortization entries will decrease the discount to zero (with rounding). Then the carrying amount of the bonds payable will be $100,000 at maturity—$100,000 in Bonds Payable minus $0 in Discount on Bonds Payable. Exhibit 12-7 shows the amortization schedule of the bond.

Exhibit 12-7 | **Bonds Payable—Discount Amortization Schedule**

	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount
01/01/2016				$ 96,149
06/30/2016	$ 4,500	$ 4,885	$ 385	96,534
12/31/2016	4,500	4,885	385	96,919
06/30/2017	4,500	4,885	385	97,304
12/31/2017	4,500	4,885	385	97,689
06/30/2018	4,500	4,885	385	98,074
12/31/2018	4,500	4,885	385	98,459
06/30/2019	4,500	4,885	385	98,844
12/31/2019	4,500	4,885	385	99,229
06/30/2020	4,500	4,885	385	99,614
12/31/2020	4,500	4,886	386*	100,000
Total	$ 45,000	$ 48,851	$ 3,851	

*rounded

Face value × Stated interest rate × Time = $100,000 × 0.09 × 6/12 = $4,500

Cash paid + Discount amortized = $4,500 + $385 = $4,885

Carrying amount + Discount amortized = $96,149 + $385 = $96,534

Discount amortized = $3,851 / 10 = $385

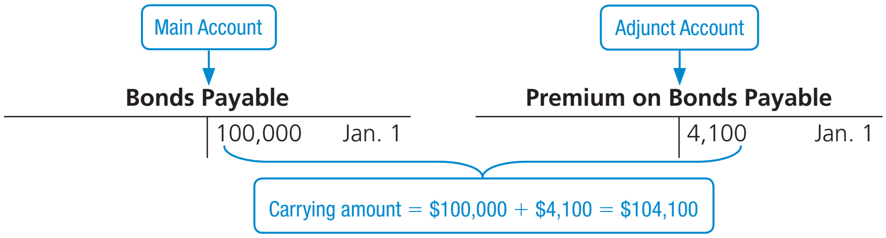
Issuing Bonds Payable at a Premium

To illustrate a bond premium, let's change the Smart Touch Learning example. Assume that the market interest rate is 8% when Smart Touch Learning issues its 9%, five-year bonds. These 9% bonds are attractive in an 8% market, and investors will pay a premium to acquire them. Assume the bonds are priced at 104.1 (104.1% of face value). In that case, Smart Touch Learning receives $104,100 cash upon issuance. Smart Touch Learning's entry to borrow money and issue these bonds is as follows:

Date	Accounts and Explanation	Debit	Credit
2016			
Jan. 1	Cash	104,100	
	Premium on Bonds Payable ($104,100 − $100,000)		4,100
	Bonds Payable		100,000
	Issued bonds at a premium.		

A↑		L↑	+	E
Cash↑	=	Bonds Payable↑ Premium on Bonds Payable↑		

After posting, the bond accounts have the following balances:



The Bonds Payable account and the Premium on Bonds Payable account each carry a credit balance. The premium is an adjunct account to Bonds Payable. **Adjunct accounts** have the same normal balance as the related account and are added to the related account on the balance sheet. Adjunct accounts work similarly to contra accounts—the only difference is that the adjunct account has the same type of balance as the main account, whereas the contra account has the opposite type of balance of its main account. Therefore, we add the Premium on Bonds Payable to Bonds Payable to determine the bonds' carrying amount. Smart Touch Learning would report these bonds payable as follows immediately after issuance:

Adjunct Account
An account that is directly related to another account. Adjunct accounts have the same normal balance as the related account and are added to the related account on the balance sheet.

Long-term Liabilities:		
Bonds Payable	$ 100,000	
Add: Premium on Bonds Payable	4,100	$ 104,100

Interest Expense on Bonds Payable Issued at a Premium

The 1% difference between the bonds' 9% stated interest rate and the 8% market rate creates the $4,100 premium ($104,100 − $100,000 face value). Smart Touch Learning borrows $104,100 but must pay back only $100,000 at maturity. The premium is like a saving of interest expense to Smart Touch Learning. The premium cuts Smart Touch Learning's cost of borrowing and reduces interest expense to 8%, the market rate. The amortization of bond premium decreases interest expense over the life of the bonds.

Straight-Line Amortization of Bond Premium

In our example, the beginning premium is $4,100 and there are 10 semiannual interest periods during the bonds' five-year life. Therefore, 1/10 of the $4,100 ($410) of bond premium is amortized each interest period. Smart Touch Learning's first semiannual interest entry is as follows:

A↓	=	**L↓**	+	**E↓**
Cash↓		Premium on Bonds Payable↓		Interest Expense↑

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 30	Interest Expense ($4,500 − $410)	4,090	
	Premium on Bonds Payable ($4,100 × 1/10)	410	
	Cash ($100,000 × 0.09 × 6/12)		4,500
	Paid semiannual interest and amortized premium.		

Interest expense of $4,090 is

- Stated interest ($4,500, which is paid in cash)
- *Minus* the amortization of the premium of $410

This same entry would be made again on December 31, 2016. So, the bond premium balance would be $3,280 on December 31, 2016.

Bonds Payable

		100,000	Jan. 1

Premium on Bonds Payable

Jun. 30	410	4,100	Jan. 1
Dec. 31	410		
		3,280	Bal.

At December 31, 2016, immediately after amortizing the bond premium, the bonds have the following carrying amount:

Long-term Liabilities:		
Bonds Payable	$ 100,000	
Add: Premium on Bonds Payable	3,280	$ 103,280

At maturity on December 31, 2020, the bond premium will have been fully amortized (it will have a zero balance), and the bonds' carrying amount will be $100,000 (the amount in the Bonds Payable account). Exhibit 12-8 shows the amortization schedule of the bond.

Exhibit 12-8 | **Bonds Payable—Premium Amortization Schedule**

	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount
01/01/2016				$ 104,100
06/30/2016	$ 4,500	$ 4,090	$ 410	103,690
12/31/2016	4,500	4,090	410	103,280
06/30/2017	4,500	4,090	410	102,870
12/31/2017	4,500	4,090	410	102,460
06/30/2018	4,500	4,090	410	102,050
12/31/2018	4,500	4,090	410	101,640
06/30/2019	4,500	4,090	410	101,230
12/31/2019	4,500	4,090	410	100,820
06/30/2020	4,500	4,090	410	100,410
12/31/2020	4,500	4,090	410	100,000
Total	$ 45,000	$ 40,900	$ 4,100	

Face value × Stated interest rate × Time
= $100,000 × 0.09 × 6/12 = $4,500

Carrying amount – Premium amortized
= $104,100 – $410 = $103,690

Cash paid – Premium amortized
= $4,500 – $410 = $4,090

Premium amortized
= $4,100 / 10 = $410

Try It!

Schmidt Company issued $100,000, 4%, 10-year bonds payable at 98 on January 1, 2016.

6. Journalize the issuance of the bonds payable on January 1, 2016.
7. Journalize the payment of semiannual interest and amortization of the bond discount or premium (using the straight-line amortization method) on July 1, 2016.
8. Assume the bonds payable was instead issued at 106. Journalize the issuance of the bonds payable and the payment of the first semiannual interest and amortization of the bond discount or premium.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S12-5 through S12-8. MyAccountingLab

HOW IS THE RETIREMENT OF BONDS PAYABLE ACCOUNTED FOR?

Learning Objective 4
Journalize transactions to retire bonds payable

Retirement of bonds payable involves paying the face value of the bond. Bonds can be retired at the maturity date or before.

Retirement of Bonds at Maturity

When the bond is matured, the carrying value always equals the face value. In the case of Smart Touch Learning, with both the discount and premium examples, on December 31, 2020, the carrying amount and face value are $100,000. The entry to retire the bonds, assuming the last interest payment has already been recorded, is as follows:

A↓	=	**L↓**	+	**E**
Cash↓		Bonds Payable↓		

Date	Accounts and Explanation	Debit	Credit
2020			
Dec. 31	Bonds Payable	100,000	
	Cash		100,000
	Retired bonds payable at maturity.		

Retirement of Bonds Before Maturity

Normally, companies wait until maturity to pay off, or *retire*, their bonds payable. But companies sometimes retire their bonds prior to maturity. The main reason for retiring bonds early is to relieve the pressure of paying the interest payments.

Callable Bonds
Bonds that the issuer may call and pay off at a specified price whenever the issuer wants.

Some bonds are **callable**, which means the company may *call*, or pay off, the bonds at a specified price. The call price is usually 100 or a few percentage points above face value, perhaps 101 or 102, to provide an incentive to the bondholder. Callable bonds give the issuer the flexibility to pay off the bonds when it benefits the company. An alternative to calling the bonds is to purchase any available bonds in the open market at their current market price. Whether the bonds are called or purchased in the open market, the same accounts are used in the journal entry.

DECISIONS

Should the bonds be callable?

Christina Hoffman, president of Hoffman Corporation, is working with the company's underwriter to define the terms of its upcoming bond issuance. Hoffman Corporation has decided to issue $1,000,000, 6%, 20-year bonds payable. The bonds will be issued at face value. The underwriter is encouraging Christina to offer the bonds as callable bonds instead of noncallable. What should Christina do?

Solution

Callable bonds provide Hoffman Corporation the right to repay the bonds before the maturity date. Callable bonds protect the corporation from having to pay high interest rates on existing debt if interest rates drop. For example, if the market rate drops to 4%, Hoffman Corporation could call the bonds and replace them with bonds that pay a 4% interest rate. Hoffman would be able to essentially refinance the higher interest debt with a lower interest rate bond. By offering the bonds as callable, Hoffman Corporation prevents itself from being locked into a high interest rate and not being able to change it.

Alternative Solution

Christina should be careful about offering a callable bond because some investors might not consider the bond a wise investment. An investor typically plans on receiving interest payments from a bond for the life of the bond, and a callable bond does not guarantee a steady stream of payments for the entire period. If the bond were called, investors would no longer receive semiannual interest payments and would be presented with the challenge of investing their money in another investment that offers a comparable return.

Suppose on December 31, 2016, Smart Touch Learning has $100,000 of bonds payable outstanding with a remaining discount balance of $3,081 (the original discount of $3,851 [$100,000 − $96,149] less the straight-line amortization of $385 in June and December [$3,851 − $385 − $385]).

Lower interest rates have convinced management to pay off these bonds now. These bonds are callable at 100. If the market price of the bonds is 95, should Smart Touch Learning call the bonds at 100 or purchase them in the open market at 95? The market price is lower than the call price, so Smart Touch Learning should buy the bonds on the open market at their market price. Retiring the bonds on December 31, 2016, at 95 results in a gain of $1,919, computed as follows:

Face value of the bonds being retired	$ 100,000
Less: Discount	(3,081)
Carrying amount of bonds payable	96,919
Less: Market price paid to retire the bonds ($100,000 × 0.95)	(95,000)
Gain on retirement of bonds payable	$ 1,919

The following entry records retirement of the bonds, immediately after the December 31, 2016, interest payment:

Date	Accounts and Explanation	Debit	Credit
2016			
Dec. 31	Bonds Payable	100,000	
	Discount on Bonds Payable		3,081
	Gain on Retirement of Bonds Payable		1,919
	Cash		95,000
	Retired bonds payable prior to maturity.		

A↓		L↓	+	E↑
Cash↓	=	Bonds Payable↓ Discount on Bonds Payable↓		Gain on Retirement of Bonds Payable↑

After posting, the bond accounts have zero balances.

Bonds Payable

		100,000	Jan. 1
Dec. 31	100,000		
		0	Bal.

Discount on Bonds Payable

Jan. 1	3,851	385	Jun. 30
		385	Dec. 31
		3,081	Dec. 31
Bal.	0		

The journal entry removes the bonds from the books and records a gain on retirement. If the bonds being retired have a premium rather than a discount, any existing premium would be removed with a debit. If Smart Touch Learning retired only half of these bonds, it would remove only half the discount or premium.

When retiring bonds before maturity, follow these steps:

1. Record partial-period amortization of discount or premium and partial-period interest payment if the retirement date does not fall on an interest payment date.
2. Write off the portion of unamortized Discount or Premium that relates to the bonds being retired.
3. Debit Bonds Payable at face value.
4. Credit a gain or debit a loss on retirement.
5. Credit Cash for amount paid to retire the bonds.

Try It!

9. Herrera Corporation issued a $400,000, 4.5%, 10-year bond payable on January 1, 2016. Journalize the payment of the bond payable at maturity. (Give the date.)

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S12-9 and S12-10. MyAccountingLab

HOW ARE LIABILITIES REPORTED ON THE BALANCE SHEET?

Learning Objective 5
Report liabilities on the balance sheet

At the end of each period, a company reports all of its current and long-term liabilities on the balance sheet. As we have seen throughout the textbook, there are two categories of liabilities, current and long-term. Exhibit 12-9 shows Smart Touch Learning's liabilities portion of its balance sheet (amounts assumed) that we have discussed up to this point.

Exhibit 12-9 | **Liabilities**

SMART TOUCH LEARNING
Balance Sheet (Partial)
December 31, 2016

Liabilities			
Current Liabilities:			
Accounts Payable		$ 12,620	
Employee Income Taxes Payable		2,000	
FICA—OASDI Taxes Payable		1,158	
FICA—Medicare Taxes Payable		855	
Employee Health Insurance Payable		180	
United Way Payable		20	
Federal Unemployment Taxes Payable		15	
State Unemployment Taxes Payable		60	
Employee Bonus Payable		1,000	
Vacation Benefits Payable		800	
Income Tax Payable		3,780	
Sales Tax Payable		600	
Estimated Warranty Payable		700	
Notes Payable (short-term)		400	
Current Portion of Mortgage Payable		1,305	
Current Portion of Long-term Notes Payable		5,000	
Total Current Liabilities			$ 30,493
Long-term Liabilities:			
Notes Payable		15,000	
Mortgage Payable		97,541	
Bonds Payable	$ 100,000		
Less: Discount on Bonds Payable	(3,081)	96,919	
Total Long-term Liabilities			209,460
Total Liabilities			**$ 239,953**

Try It!

10. Weaver Corporation includes the following selected accounts in its general ledger at December 31, 2016:

Notes Payable (long-term)	$ 75,000	Interest Payable (due next year)	$ 720
Bonds Payable (long-term)	195,000	Sales Tax Payable	480
Accounts Payable	20,400	Premium on Bonds Payable	5,850
Salaries Payable	1,680	Estimated Warranty Payable	1,080

Prepare the liabilities section of Weaver Corporation's balance sheet at December 31, 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S12-11. MyAccountingLab

HOW DO WE USE THE DEBT TO EQUITY RATIO TO EVALUATE BUSINESS PERFORMANCE?

The relationship between total liabilities and total equity—called the **debt to equity ratio**—shows the proportion of total liabilities relative to the total equity. Thus, this ratio measures financial leverage. If the debt to equity ratio is greater than 1, then the company is financing more assets with debt than with equity. If the ratio is less than 1, then the company is financing more assets with equity than with debt. The higher the debt to equity ratio, the greater the company's financial risk.

Learning Objective 6

Use the debt to equity ratio to evaluate business performance

Debt to Equity Ratio

A ratio that measures the proportion of total liabilities relative to total equity. Total liabilities / Total equity.

Green Mountain Coffee Roasters, Inc. reported total liabilities and total equity (in thousands) on its Fiscal 2013 Annual Report as follows:

	September 28, 2013	September 29, 2012
Total liabilities	$ 1,125,978	$ 1,354,561
Total equity	2,635,570	2,261,228

Green Mountain's debt to equity ratio as of September 28, 2013, can be calculated as follows:

Debt to equity ratio = Total liabilities / Total equity
= $1,125,978 / $2,635,570
= 0.43

Green Mountain's debt to equity ratio as of September 24, 2013, is well below 1, indicating that the company is financing more assets with equity than with debt. Notice that its debt to equity ratio has improved from 2012, when Green Mountain had a debt to equity ratio of 0.60 ($1,354,561 / $2,261,228). This has to do with the fact that Green Mountain experienced an increase in equity and a decrease in liabilities during 2013. Green Mountain's debt to equity ratios for both years indicate a fairly low risk position.

ETHICS

Should additional debt be issued?

Phillip Mader is president and majority stockholder of Knightly Corporation. Phillip owns 54% of the stock in the corporation. The corporation is in dire need of additional cash inflow in order to maintain operations. Phillip is urging the board of directors to issue additional debt even though he knows that the corporation already has a substantial amount of debt. Phillip is well aware that by issuing additional debt, the corporation's debt to equity ratio will increase significantly. He believes this will negatively affect the corporation's credit rating and will further limit the company's ability to borrow at low interest rates in the future. Phillip, however, believes all of this is offset by his desire to retain control of the corporation. If the corporation doesn't issue additional debt, it will be forced to issue stock in order to obtain the necessary funds. Phillip does not have the ability to purchase any of the additional shares of stock, and he knows that he will lose his majority stockholder status. What should Phillip do? What would you do?

Solution

Phillip's overall ethical responsibility lies with the good of the company over what is best for himself. In urging the corporation to issue additional debt, he is putting his needs and desires over the corporation's and the other stockholders' needs. Phillip is aware that by issuing additional debt the corporation will be negatively affected. He should urge the board to issue stock—even though he will not gain personally from the situation. His leadership role as president of the corporation should take precedence over his role as majority stockholder.

Try It!

11. Payne Corporation has the following accounts as of December 31, 2016:

Total assets	$ 60,000
Total liabilities	20,000
Total equity	40,000

Compute the debt to equity ratio at December 31, 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S12-12. MyAccountingLab

APPENDIX 12A: The Time Value of Money

WHAT IS THE TIME VALUE OF MONEY, AND HOW IS THE PRESENT VALUE OF A FUTURE AMOUNT CALCULATED?

Learning Objective 7

Use time value of money to compute the present value of future amounts

A dollar received today is worth more than a dollar to be received in the future because you can invest today's dollar and earn additional interest so you'll have more cash next year. The fact that invested cash earns interest over time is called the *time value of money*. This concept explains why we would prefer to receive cash sooner rather than later. The time value of money is used to determine the present value of a bond—its market price.

Time Value of Money Concepts

The time value of money depends on these key factors:

1. The principal amount (*p*)
2. The number of periods (*n*)
3. The interest rate (*i*)

The principal (*p*) refers to the amount of the investment or borrowing. We state the principal as either a single lump sum or an annuity. For example, if you win the lottery, you have the choice of receiving all the winnings now (a single lump sum) or receiving a series of equal payments for a period of time in the future (an annuity). An **annuity** is a stream of *equal cash payments* made at *equal time intervals.*[1] For example, $100 cash received per month for 12 months is an annuity.

Annuity
A stream of equal cash payments made at equal time intervals.

The number of periods (*n*) is the length of time from the beginning of the investment or borrowing until termination. All else being equal, the shorter the investment or borrowing period, the lower the total amount of interest earned or paid. If you withdraw your savings after four years rather than five years, you will earn less interest. For bonds, the number of periods is the number of interest payments made. For example, if a five-year bond pays interest semiannually, the number of periods will be 10 (5 years × 2 payments per year).

The interest rate (*i*) is the percentage earned on the investment or paid on the borrowing and can be stated annually or in days, months, or quarters. The interest rate must reflect the number of time periods in the year. A five-year semiannual bond that has an annual market interest rate of 10% will reflect a market interest rate of 5% semiannually (10% per year / 2 periods per year). Interest can be computed as either simple interest or compound interest.

Simple Interest Versus Compound Interest

Simple Interest
Interest calculated only on the principal amount.

Compound Interest
Interest calculated on the principal and on all previously earned interest.

Simple interest means that interest is calculated *only* on the principal amount. **Compound interest** means that interest is calculated on the principal *and* on all previously earned interest. *Compound interest assumes that all interest earned will remain invested and earn additional interest at the same interest rate.* Exhibit 12A-1 compares simple interest of 6% on a five-year, $10,000 investment with interest compounded yearly (rounded to the nearest

Exhibit 12A-1 **Simple Interest Versus Compound Interest—$10,000 at 6% for 5 Years**

Year	Simple Interest Calculation	Simple Interest	Compound Interest Calculation	Compound Interest
1	$10,000 × 6%	$ 600	$10,000 × 6%	$ 600
2	$10,000 × 6%	600	($10,000 + $600) × 6%	636
3	$10,000 × 6%	600	($10,000 + $600 + $636) × 6%	674*
4	$10,000 × 6%	600	($10,000 + $600 + $636 + $674) × 6%	715
5	$10,000 × 6%	600	($10,000 + $600 + $636 + $674 + $715) × 6%	758
	Total interest	**$ 3,000**	**Total interest**	**$ 3,383**

*all calculations rounded to the nearest dollar for the rest of this chapter

---

[1] An *ordinary annuity* is an annuity in which the installments occur at the *end* of each period. An *annuity due* is an annuity in which the installments occur at the beginning of each period. Throughout this chapter, we use ordinary annuities.

dollar). As you can see, the amount of compound interest earned yearly grows as the base on which it is calculated (principal plus cumulative interest to date) grows. Over the life of this investment, the total amount of compound interest is more than the total amount of simple interest. Most investments yield compound interest, so we assume compound interest, rather than simple interest, for this chapter.

Present Value Factors

The future value or present value of an investment simply refers to the value of an investment at different points in time. We can calculate the future value or present value of any investment by knowing (or assuming) information about the three factors we listed earlier: (1) the principal amount, (2) number of periods, and (3) the interest rate. For example, in Exhibit 12A-1, we calculated the interest that would be earned on (1) a $10,000 principal, (2) invested for five years, (3) at 6% interest. The future value of the investment is simply its worth at the end of the five-year time frame—the original principal *plus* the interest earned. In our example, the future value of the investment is as follows:

$$\begin{aligned}\text{Future value} &= \text{Principal} + \text{Interest earned}\\ &= \$10{,}000 + \$3{,}383\\ &= \$13{,}383\end{aligned}$$

If we invest $10,000 *today*, its *present value* is simply $10,000. So another way of stating the future value is as follows:

$$\text{Future value} = \text{Present value} + \text{Interest earned}$$

We can rearrange the equation as follows:

$$\begin{aligned}\text{Present value} &= \text{Future value} - \text{Interest earned}\\ \$10{,}000 &= \$13{,}383 - \$3{,}383\end{aligned}$$

The only difference between present value and future value is the amount of interest that is earned in the intervening time span.

Calculating each period's compound interest, as we did in Exhibit 12A-1, and then adding it to the present value to determine the future value (or subtracting it from the future value to determine the present value) is tedious. Fortunately, mathematical formulas have been developed that specify future values and present values for unlimited combinations of interest rates (i) and time periods (n). Separate formulas exist for single lump sum investments and annuities.

These formulas are programmed into most business calculators, so the user only needs to correctly enter the principal amount, interest rate, and number of time periods to find present or future values. These formulas are also programmed into spreadsheet functions in Microsoft Excel. Using Excel to calculate present values is illustrated later in the Capital Investment Decisions chapter. In this chapter, we use present value tables. The present value tables contain the results of the formulas for various interest rate and time period combinations.

The formulas and resulting tables are shown in Appendix B at the end of this book:

1. Present Value of $1 (Appendix B, Table B-1)—*used to calculate the value today of one future amount (a lump sum)*
2. Present Value of Ordinary Annuity of $1 (Appendix B, Table B-2)—*used to calculate the value today of a series of equal future amounts (annuities)*

Take a moment to look at these tables because we are going to use them throughout the rest of the appendix. Note that the columns are interest rates (*i*) and the rows are periods (*n*).

The data in each table, known as present value factors (PV factors), are for an investment (or loan) of $1. To find the present value of an amount other than $1, multiply the PV factor by the future amount.

The annuity tables are derived from the lump sum tables. For example, the Annuity PV factors (in the Present Value of Ordinary Annuity of $1 table) are the *sums* of the PV factors found in the Present Value of $1 tables for a given number of time periods. The annuity tables allow us to perform one-step calculations rather than separately computing the present value of each annual cash installment and then summing the individual present values.

Present Value of a Lump Sum

The process for calculating present values is often called *discounting future cash flows* because future amounts are discounted (interest removed) to their present value. Let's consider the investment in Exhibit 12A-1. The future value of the investment is $13,383. So the question is "How much would I have to invest today (in the present time) to have $13,383 five years in the future if I invested at 6%?" Let's calculate the present value using PV factors.

$$\text{Present value} = \text{Future value} \times \text{PV factor for } i = 6\%,\ n = 5$$

We determine the PV factor from the table labeled Present Value of $1 (Appendix B, Table B-1). We use this table for lump sum amounts. We look down the 6% column and across the 5 periods row and find the PV factor is 0.747. We finish our calculation as follows:

$$\begin{aligned}\text{Present value} &= \text{Future value} \times \text{PV factor for } i = 6\%,\ n = 5\\ &= \$13{,}383 \times 0.747\\ &= \$9{,}997\end{aligned}$$

Notice the calculation is off by $3 due to rounding ($10,000 − $9,997). The PV factors are rounded to three decimal places, so the calculations may not be exact. Also, the interest calculations in Exhibit 12A-1 were rounded to the nearest dollar. Therefore, there are two rounding issues in this calculation. However, we do have the answer to our question: If approximately $9,997 is invested today at 6% for five years, at the end of five years, the investment will grow to $13,383. Or, conversely, if we expect to receive $13,383 five years from now, its equivalent (discounted) value today is $9,997.

Present Value of an Annuity

Let's now assume that instead of receiving a lump sum at the end of the five years, you will receive $2,000 at the end of each year. This is a series of equal payments ($2,000) over equal intervals (years), so it is an annuity. How much would you have to invest today to receive these payments, assuming an interest rate of 6%?

We determine the annuity PV factor from the table labeled Present Value of Ordinary Annuity of $1 (Appendix B, Table B-2). We use this table for annuities. We look down the 6% column and across the 5 periods row and find the annuity PV factor is 4.212. We finish our calculation as follows:

$$\begin{aligned}\text{Present value} &= \text{Amount of each cash inflow} \times \text{Annuity PV factor for } i = 6\%,\ n = 5\\ &= \$2{,}000 \times 4.212\\ &= \$8{,}424\end{aligned}$$

This means that an investment today of $8,424 at 6% will yield total payments of $10,000 over 5 years ($2,000 per year × 5 years). The reason is that interest is being earned on principal that is left invested each year. Let's verify the calculation.

Year	[1] Beginning Balance Previous [4]	[2] Interest [1] × 6%	[3] Withdrawal $2,000	[4] Ending Balance [1] + [2] – [3]
0				$ 8,424
1	$ 8,424	$ 505	$ 2,000	6,929
2	6,929	416	$ 2,000	5,345
3	5,345	321	$ 2,000	3,666
4	3,666	220	$ 2,000	1,886
5	1,886	114*	$ 2,000	0

*rounded up by $1

The chart shows that the initial investment of $8,424 is invested for one year, earning $505 in interest. At the end of that period, the first withdrawal of $2,000 takes place, leaving a balance of $6,929 ($8,424 + $505 − $2,000). At the end of the five years, the ending balance is $0 proving that the PV of the $2,000 annuity is $8,424.

Present Value of Bonds Payable

We can use what we have just learned about the present value of a lump sum and present value of an annuity to calculate the present value of bonds payable. The present value of a bond—its market price—is the sum of:

- the present value of the principal amount to be paid at maturity, a single amount (present value of a lump sum)
- *plus* the present value of the future stated interest payments, an annuity because it occurs in equal amounts over equal time periods (present value of an annuity).

Present Value of a Bonds Payable Issued at a Discount

Let's compute the present value of Smart Touch Learning's 9%, five-year bonds. The face value of the bonds is $100,000, and they pay (9% × 6/12) or 4.5% stated interest semiannually. At issuance, the annual market interest rate is 10% (5% semiannually). Therefore, the market interest rate for each of the 10 semiannual periods is 5%. We use 5% to compute the present value (PV) of the maturity value and the present value (PV) of the stated interest. The present value of these bonds is $96,149, computed as follows:

Present value of principal:

Present value = Future value × PV factor for $i = 5\%$, $n = 10$
= \$100,000 × 0.614
= \$61,400

Present value of stated interest:

Present value = Amount of each cash flow × Annuity PV factor for $i = 5\%$, $n = 10$
= (\$100,000 × 0.09 × 6/12) × 7.722
= \$34,749

Present value of bonds payable:

Present value = PV of principal + PV of stated interest
= \$61,400 + \$34,749
= \$96,149

Notice that the stated interest rate (9% × 6/12 = 4.5%), not the market interest rate (5%), is used to calculate the amount of each cash flow for interest. This is because the bonds payable pay interest based on the rate stated in the contract, not the rate of the market.

Present Value of a Bonds Payable Issued at a Premium

Let's consider a premium price for the Smart Touch Learning bonds. Suppose the market interest rate is 8% at issuance (4% for each of the 10 semiannual periods). We would compute the market price of these bonds as follows:

Present value of principal:

Present value = Future value × PV factor for $i = 4\%$, $n = 10$
= \$100,000 × 0.676
= \$67,600

Present value of stated interest:

Present value = Amount of each cash flow × Annuity PV factor for $i = 4\%$, $n = 10$
= (\$100,000 × 0.09 × 6/12) × 8.111
= \$36,500

Present value of bonds payable:

Present value = PV of principal + PV of stated interest
= \$67,600 + \$36,500
= \$104,100

Try It!

12A. On December 31, 2016, when the market interest rate is 8%, Arnold Corporation issues \$200,000 of 6%, 10-year bonds payable. The bonds pay interest semiannually. Determine the present value of the bonds at issuance.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S12A-13 and S12A-14. MyAccountingLab

APPENDIX 12B: Effective-Interest Method of Amortization

HOW ARE BONDS PAYABLE ACCOUNTED FOR USING THE EFFECTIVE-INTEREST AMORTIZATION METHOD?

Learning Objective 8

Journalize transactions for bonds payable and interest expense using the effective-interest amortization method

We began this chapter with straight-line amortization to introduce the concept of amortizing bonds. A more precise way of amortizing bonds used in practice called the **effective-interest amortization method**. This method calculates interest expense based on the current carrying amount of the bond and the market interest rate at issuance, then amortizes the difference between the cash interest payment and calculated interest expense as a decrease to the discount or premium. This appendix explains the present value concepts used to amortize bond discounts and premiums using the effective-interest amortization method.

Effective-Interest Amortization Method

An amortization model that calculates interest expense based on the current carrying amount of the bond and the market interest rate at issuance, then amortizes the difference between the cash interest payment and calculated interest expense as a decrease to the discount or premium.

Generally Accepted Accounting Principles require that interest expense be measured using the *effective-interest amortization method* unless the straight-line amounts are similar. In that case, either method is permitted. Total interest expense over the life of the bonds is the same under both methods; however, interest expense each year is different between the two methods. Let's look at how the effective-interest amortization method works.

Effective-Interest Amortization for a Bond Discount

Assume that Smart Touch Learning issues $100,000 of 9% bonds at a time when the market rate of interest is 10%. These bonds mature in five years and pay interest semiannually, so there are 10 semiannual interest payments. As you just saw in Appendix 12A, the issue price of the bonds is $96,149, and the discount on these bonds is $3,851 ($100,000 − $96,149).

When using the effective-interest amortization method, the amount of the interest expense is calculated using the *carrying amount* of the bonds and the *market interest rate.* The interest payment is calculated using the *face value* of the bonds and the *stated interest rate*. The amount of discount amortization is the excess of the calculated interest expense over the interest payment. Exhibit 12B-1 shows how to calculate interest expense by the effective-interest amortization method.

Exhibit 12B-1 | **Bonds Payable—Discount Amortization Schedule; Effective-Interest Amortization Method**

	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount
01/01/2016				$ 96,149
06/30/2016	$ 4,500	$ 4,807	$ 307	96,456
12/31/2016	4,500	4,823	323	96,779
06/30/2017	4,500	4,839	339	97,118
12/31/2017	4,500	4,856	356	97,474
06/30/2018	4,500	4,874	374	97,848
12/31/2018	4,500	4,892	392	98,240
06/30/2019	4,500	4,912	412	98,652
12/31/2019	4,500	4,933	433	99,085
06/30/2020	4,500	4,954	454	99,539
12/31/2020	4,500	4,961*	461	100,000
Total	$ 45,000	$ 48,851	$ 3,851	

Interest Expense − Cash paid = $4,807 − $4,500 = $307

Carrying amount + Discount amortized = $96,149 + $307 = $96,456

*rounded

Face value × *Stated* Interest rate × Time = $100,000 × 0.09 × 6/12 = $4,500

Carrying amount × *Market* interest rate × Time = $96,149 × 0.10 × 6/12 = $4,807

When recording the interest payment for the bonds payable, the *accounts* debited and credited under the effective-interest amortization method and the straight-line amortization method are the same. Only the *amounts* differ. Smart Touch Learning would record the first interest payment on June 30 as follows:

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 30	Interest Expense ($96,149 × 0.10 × 6/12)	4,807	
	Discount on Bonds Payable ($4,807 − $4,500)		307
	Cash ($100,000 × 0.09 × 6/12)		4,500
	Paid semiannual interest and amortized discount.		

A↓	=	L↑	+	E↓
Cash↓		Discount on Bonds Payable↓		Interest Expense↑

Regardless of which method is used, the *total* amount of cash paid and *total* interest expense is the same. You can verify this by reviewing the totals from Exhibit 12-7 and Exhibit 12B-1.

Effective-Interest Amortization of a Bond Premium

Smart Touch Learning may issue its bonds payable at a premium. Assume that Smart Touch Learning issues $100,000 of five-year, 9% bonds when the market interest rate is 8%. The bonds' issue price is $104,100, and the premium is $4,100. When a bond is issued at a premium, the interest expense calculation using the effective-interest amortization method uses the *carrying amount* of the bonds and the *market interest rate* as shown with a discounted bond. The calculation for the amount of premium amortization is calculated as the difference between the cash paid and the calculated interest expense. Exhibit 12B-2 (on the next page) provides the amortization schedule using the effective-interest amortization method for Smart Touch Learning.

Exhibit 12B-2 | **Bonds Payable—Premium Amortization Schedule; Effective-Interest Amortization Method**

	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount
01/01/2016				$ 104,100
06/30/2016	$ 4,500	$ 4,164	$ 336	103,764
12/31/2016	4,500	4,151	349	103,415
06/30/2017	4,500	4,137	363	103,052
12/31/2017	4,500	4,122	378	102,674
06/30/2018	4,500	4,107	393	102,281
12/31/2018	4,500	4,091	409	101,872
06/30/2019	4,500	4,075	425	101,447
12/31/2019	4,500	4,058	442	101,005
06/30/2020	4,500	4,040	460	100,545
12/31/2020	4,500	3,955*	545	100,000
Total	$ 45,000	$ 40,900	$ 4,100	

*rounded

Cash paid − Interest expense
= $4,500 − $4,164 = $336

Carrying amount − Premium amortized
= $104,100 − $336 = $103,764

Face value × *Stated* Interest rate × Time
= $100,000 × 0.09 × 6/12 = $4,500

Carrying amount × *Market* interest rate × Time
= $104,100 × 0.08 × 6/12 = $4,164

Smart Touch Learning will record the first interest payment on June 30 as follows:

A↓ = **L↓** + **E↓**

Cash↓ = Premium on Bonds Payable↓ + Interest Expense↑

Date	Accounts and Explanation	Debit	Credit
2016			
Jun. 30	Interest Expense ($104,100 × 0.08 × 6/12)	4,164	
	Premium on Bonds Payable ($4,500 − $4,164)	336	
	Cash ($100,000 × 0.09 × 6/12)		4,500
	Paid semiannual interest and amortized premium.		

Regardless of which method is used, the *total* amount of cash paid and *total* interest expense is the same. You can verify this by reviewing the totals from Exhibit 12-8 and Exhibit 12B-2.

Try It!

13B. On January 1, 2016, when the market interest rate is 6%, Hawkins Corporation issues $200,000 of 8%, five-year bonds payable. The bonds pay interest semiannually. Hawkins Corporation received $217,040 in cash at issuance. Assume interest payment dates are June 30 and December 31.

Prepare an effective-interest amortization method amortization table for the first two semiannual interest periods.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S12B-15 and S12B-16. MyAccountingLab

REVIEW

> Things You Should Know

1. How are long-term notes payable and mortgages payable accounted for?

- Long-term notes payable and mortgages payable are reported in the long-term liabilities section of the balance sheet unless there is a portion due within one year. That portion is shown in the current liabilities section of the balance sheet.
- An amortization schedule should be prepared that details each loan payment's allocation between principal and interest and also the beginning and ending balances of the loan.
- Mortgages payable are long-term debts that are backed with a security interest in specific property.

2. What are bonds?

- Bonds payable represent long-term debt issued to multiple lenders called bondholders, usually in increments of $1,000 per bond.
- The bond requires a face value payment at maturity and interest payments based on a stated interest rate over the life of the bond.
- A bond can be issued at face value, a discount, or a premium.
    - Face value—Bond is issued at face value. The stated interest rate is equal to the market interest rate.
    - A discount—Bond is issued at less than face value. The stated interest rate is less than the market interest rate.
    - A premium—Bond is issued for more than face value. The stated interest rate is higher than the market interest rate.

3. How are bonds payable accounted for using the straight-line amortization method?

- The basic journal entry to record the issuance of bonds payable debits Cash and credits Bonds Payable.
    - If a bond is issued at a discount, Discount on Bonds Payable will be debited for the difference between the face value and cash received.
    - If a bond is issued at a premium, Premium on Bonds Payable will be credited for the difference between the cash received and face value.
- Interest payments must be recorded with a debit to Interest Expense and a credit to Cash.
    - Discount on Bonds Payable and Premium on Bonds Payable must be amortized over the life of the bond.
    - The straight-line amortization method allocates an equal amount of the bond discount or premium to each interest period.

4. How is the retirement of bonds payable accounted for?

- When bonds are retired at maturity, the entry involves a debit to Bonds Payable and a credit to Cash for the face value of the bond.
- Retirement of bonds before maturity involves writing off the remaining portion of the discount or premium account and crediting a gain or debiting a loss on retirement.

5. How are liabilities reported on the balance sheet?

- Current and long-term liabilities are reported separately on the balance sheet.
- Bonds payable are shown at the carrying amount.

6. How do we use the debt to equity ratio to evaluate business performance?

- The debt to equity ratio shows the proportion of total liabilities relative to the total equity.
- Total liabilities / Total equity.

7. What is the time value of money, and how is the present value of a future amount calculated? (Appendix 12A)

- The fact that invested money earns interest over time is called the *time value of money*. This concept explains why we would prefer to receive cash sooner rather than later.
- Lump sum payments are one-time cash payments.
- Annuities are streams of equal cash payments made at equal time intervals.
- To calculate the present value of a lump sum:

$$\text{Present value} = \text{Future value} \times \text{PV factor for } i = ?\%,\ n = ?$$

- To calculate the present value of an annuity:

$$\text{Present value} = \text{Amount of each cash inflow} \times \text{Annuity PV factor for } i = ?\%,\ n = ?$$

8. How are bonds payable accounted for using the effective-interest amortization method? (Appendix 12B)

- The effective-interest amortization method calculates interest expense based on the current carrying amount of the bond and the market interest rate at issuance, then amortizes the difference between the cash interest payment and calculated interest expense as a decrease to the discount or premium.
- Using the effective-interest amortization method, the amount of interest expense is calculated using the carrying amount of the bonds and the market interest rate.

> Summary Problem 12-1

West Virginia Power Company has 8%, 10-year bonds payable that mature on June 30, 2026. The bonds are issued on June 30, 2016, and West Virginia Power pays interest each June 30 and December 31.

Requirements

1. Will the bonds be issued at face value, at a premium, or at a discount if the market interest rate on the date of issuance is 7%? If the market interest rate is 10%?
2. West Virginia Power issued $100,000 of the bonds at 87.548. Round all calculations to the nearest dollar.
   - **a.** Record issuance of the bonds on June 30, 2016.
   - **b.** Record the payment of interest and amortization of the discount on December 31, 2016. Use the straight-line amortization method.
   - **c.** Compute the bonds' carrying amount at December 31, 2016.
   - **d.** Record the payment of interest and amortization of discount on June 30, 2017.

> Solution

Requirement 1

If the market interest rate is 7%, the bonds will be issued at a premium.

If the market interest rate is 10%, the bonds will be issued at a discount.

Requirement 2

Date	Accounts and Explanation	Debit	Credit
2016			
(a) Jun. 30	Cash ($100,000 × 0.87548)	87,548	
	Discount on Bonds Payable ($100,000 − $87,548)	12,452	
	Bonds Payable		100,000
	Issued bonds at a discount.		
(b) Dec. 31	Interest Expense ($4,000 + $623)	4,623	
	Discount on Bonds Payable ($12,452 × 1/20)		623
	Cash ($100,000 × 0.08 × 6/12)		4,000

c. Carrying amount at December 31, 2016

Long-term Liabilities:		
Bonds Payable	$ 100,000	
Less: Discount on Bonds Payable ($12,452 − $623)	(11,829)	$ 88,171

Date	Accounts and Explanation	Debit	Credit
2017			
(d) Jun. 30	Interest Expense ($4,000 + $623)	4,623	
	Discount on Bonds Payable ($12,452 × 1/20)		623
	Cash ($100,000 × 0.08 × 6/12)		4,000

> Key Terms

Adjunct Account (p. 633)

Amortization Schedule (p. 621)

Annuity (p. 641) (Appendix 12A)

Bond Payable (p. 624)

Callable Bonds (p. 636)

Carrying Amount of Bonds (p. 631)

Compound Interest (p. 641) (Appendix 12A)

Debentures (p. 626)

Debt to Equity Ratio (p. 639)

Discount on Bonds Payable (p. 626)

Effective-Interest Amortization Method (p. 646) (Appendix 12B)

Face Value (p. 625)

Financial Leverage (p. 629)

Market Interest Rate (p. 628)

Mortgages Payable (p. 622)

Premium on Bonds Payable (p. 626)

Present Value (p. 627)

Secured Bonds (p. 626)

Serial Bonds (p. 626)

Simple Interest (p. 641) (Appendix 12A)

Stated Interest Rate (p. 626)

Straight-Line Amortization Method (p. 631)

Term Bonds (p. 626)

Time Value of Money (p. 627)

> Quick Check

Learning Objective 1

1. Flipco signed a 10-year note payable on January 1, 2016, of $800,000. The note requires annual principal payments each December 31 of $80,000 plus interest at 5%. The entry to record the annual payment on December 31, 2017, includes
   - **a.** a debit to Interest Expense for $36,000.
   - **b.** a debit to Interest Expense for $40,000.
   - **c.** a credit to Notes Payable for $80,000.
   - **d.** a credit to Cash of $120,000.

Learning Objective 2

2. Daniels's bonds payable carry a stated interest rate of 5%, and the market rate of interest is 7%. The issue price of the Daniels's bonds will be at
   - **a.** par value.
   - **b.** a premium.
   - **c.** face value.
   - **d.** a discount.

Learning Objective 2

3. A bond that matures in installments at regular intervals is a
   - **a.** term bond.
   - **b.** serial bond.
   - **c.** periodic bond.
   - **d.** terminal bond.

Learning Objective 3

4. Alan Smith Antiques issued its 7%, 20-year bonds payable at a price of $846,720 (face value is $900,000). The company uses the straight-line amortization method for the bond discount or premium. Interest expense for each year is
   - **a.** $65,664.
   - **b.** $60,336.
   - **c.** $63,000.
   - **d.** $59,270.

Learning Objective 3

5. Nicholas Smith Fitness Gym has $700,000 of 20-year bonds payable outstanding. These bonds had a discount of $56,000 at issuance, which was 10 years ago. The company uses the straight-line amortization method. The current carrying amount of these bonds payable is
   - **a.** $672,000.
   - **b.** $644,000.
   - **c.** $700,000.
   - **d.** $728,000.

Learning Objective 4

6. Vasquez issued a $400,000 face value, 8%, 20-year bond at 95. Which of the following is the correct journal entry to record the retirement of the bond at maturity?

Date	Accounts and Explanation	Debit	Credit
a.	Bonds Payable	380,000	
	Cash		380,000
b.	Cash	400,000	
	Bonds Payable		400,000
c.	Bonds Payable	400,000	
	Cash		400,000
d.	Cash	380,000	
	Bonds Payable		380,000

Learning Objective 5

7. Sassy's trial balance shows $200,000 face value of bonds with a discount balance of $2,000. The bonds mature in 10 years. How will the bonds be presented on the balance sheet?

   a. Bonds payable $198,000 (net of $2,000 discount) will be listed as a long-term liability.
   b. Bonds payable $200,000 will be listed as a long-term liability. A $2,000 discount on bonds payable will be listed as a contra current liability.
   c. Bonds payable $200,000 will be listed as a long-term liability.
   d. Bonds payable $200,000 will be listed as a long-term liability. A $2,000 discount on bonds payable will be listed as a current liability.

Learning Objective 6

8. The debt to equity ratio is calculated as

   a. Total assets / Total equity.
   b. Current liabilities / Total equity.
   c. Total liabilities / Total assets.
   d. Total liabilities / Total equity.

Learning Objective 7
Appendix 12A

9A. Mike Gordon wishes to have $80,000 in five years. If he can earn annual interest of 2%, how much must he invest today?

   a. $42,170
   b. $72,480
   c. $76,080
   d. $88,320

Learning Objective 8
Appendix 12B

10B. Hicks Corporation issued $500,000 of 5%, 10-year bonds payable at a price of 92. The market interest rate at the date of issuance was 6%, and the bonds pay interest semiannually. The journal entry to record the first semiannual interest payment using the effective-interest amortization method is

Date	Accounts and Explanation	Debit	Credit
a.	Interest Expense	14,500	
	Discount on Bonds Payable		2,000
	Cash		12,500
b.	Interest Expense	13,800	
	Discount on Bonds Payable		1,300
	Cash		12,500
c.	Interest Expense	17,000	
	Discount on Bonds Payable		2,000
	Cash		15,000
d.	Interest Expense	16,300	
	Discount on Bonds Payable		1,300
	Cash		15,000

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. Where is the current portion of notes payable reported on the balance sheet?
2. What is an amortization schedule?
3. What is a mortgage payable?
4. What is a bond payable?
5. What is the difference between the stated interest rate and the market interest rate?
6. When does a discount on bonds payable occur?
7. When does a premium on bonds payable occur?
8. When a bond is issued, what is its present value?
9. Why would a company choose to issue bonds instead of issuing stock?
10. What is the carrying amount of a bond?
11. In regard to a bond discount or premium, what is the straight-line amortization method?
12. What is the normal balance of the account Discount on Bonds Payable? Is it added to or subtracted from the Bonds Payable account to determine the carrying amount?
13. What is the normal balance of the account Premium on Bonds Payable? Is it added to or subtracted from the Bonds Payable account to determine the carrying amount?
14. What is the journal entry to retire bonds at maturity?
15. What does it mean when a company calls a bond?
16. What are the two categories of liabilities reported on the balance sheet? Provide examples of each.
17. What does the debt to equity ratio show, and how is it calculated?

18A. Explain each of the key factors that time value of money depends on.

19A. What is an annuity?

20A. How does compound interest differ from simple interest?

21B. In regard to a bond discount or premium, what is the effective-interest amortization method?

> Short Exercises

Assume bonds payable are amortized using the straight-line amortization method unless stated otherwise.

Learning Objective 1

S12-1 Accounting for a long-term note payable

On January 1, 2016, Locker-Farrell signed a $200,000, 10-year, 13% note. The loan required Locker-Farrell to make annual payments on December 31 of $20,000 principal plus interest.

Requirements

1. Journalize the issuance of the note on January 1, 2016.
2. Journalize the first note payment on December 31, 2016.

S12-2 Accounting for mortgages payable

Learning Objective 1

Elie purchased a building with a market value of $335,000 and land with a market value of $55,000 on January 1, 2016. Elie paid $10,000 cash and signed a 15-year, 12% mortgage payable for the balance.

Requirements

1. Journalize the January 1, 2016, purchase.
2. Journalize the first monthly payment of $4,561 on January 31, 2016. (Round to the nearest dollar.)

S12-3 Determining bond prices

Learning Objective 2

Bond prices depend on the market rate of interest, stated rate of interest, and time. Determine whether the following bonds payable will be issued at face value, at a premium, or at a discount:

a. The market interest rate is 8%. Idaho issues bonds payable with a stated rate of 7.75%.

b. Austin issued 9% bonds payable when the market interest rate was 8.25%.

c. Cleveland's Cars issued 10% bonds when the market interest rate was 10%.

d. Atlanta's Tourism issued bonds payable that pay the stated interest rate of 8.5%. At issuance, the market interest rate was 10.25%.

S12-4 Pricing bonds

Learning Objective 2

Bond prices depend on the market rate of interest, stated rate of interest, and time.

Requirements

1. Compute the price of the following 6% bonds of Friendship Telecom.
    a. $400,000 issued at 77.50
    b. $400,000 issued at 105.25
    c. $400,000 issued at 95.25
    d. $400,000 issued at 102.25
2. Which bond will Friendship Telecom have to pay the most to retire the bond at maturity? Explain

S12-5 Determining bond amounts

Learning Objective 3

Sonic Drive-Ins borrowed money by issuing $2,000,000 of 9% bonds payable at 91.5.

Requirements

1. How much cash did Sonic receive when it issued the bonds payable?
2. How much must Sonic pay back at maturity?
3. How much cash interest will Sonic pay each six months?

S12-6 Journalizing bond transactions

Learning Objective 3

Power Company issued a $600,000, 11%, 10-year bond payable at at face value on January 1, 2016.

Requirements

1. Journalize the issuance of the bond payable on January 1, 2016.
2. Journalize the payment of semiannual interest on July 1, 2016.

Learning Objective 3

S12-7 Journalizing bond transactions

Origin issued a $60,000, 5%, 10-year bond payable at 96 on January 1, 2016.

Requirements

1. Journalize the issuance of the bond payable on January 1, 2016.
2. Journalize the payment of semiannual interest and amortization of the bond discount or premium on July 1, 2016.

Learning Objective 3

S12-8 Journalizing bond transactions

Wilkes Mutual Insurance Company issued a $70,000, 11%, 10-year bond payable at 111 on January 1, 2016.

Requirements

1. Journalize the issuance of the bond payable on January 1, 2016.
2. Journalize the payment of semiannual interest and amortization of the bond discount or premium on July 1, 2016.

Learning Objectives 3, 4

S12-9 Journalizing bond transactions including retirement at maturity

Yancy issued a $75,000, 5.5%, 10-year bond payable. Journalize the following transactions for Yancy and include an explanation for each entry:

a. Issuance of the bond payable at face value on January 1, 2016.

b. Payment of semiannual cash interest on July 1, 2016.

c. Payment of the bond payable at maturity. (Give the date.)

Learning Objectives 3, 4

S12-10 Retiring bonds payable before maturity

On January 1, 2016, Peterson issued $150,000 of 9%, five-year bonds payable at 103. Peterson has extra cash and wishes to retire the bonds payable on January 1, 2017, immediately after making the second semiannual interest payment. To retire the bonds, Peterson pays the market price of 99.

Requirements

1. What is Peterson's carrying amount of the bonds payable on the retirement date?
2. How much cash must Peterson pay to retire the bonds payable?
3. Compute Peterson's gain or loss on the retirement of the bonds payable.

Learning Objective 5

S12-11 Preparing the liabilities section of the balance sheet

Master Suites Hotels includes the following selected accounts in its general ledger at December 31, 2016:

Notes Payable (long-term)	$ 250,000	Accounts Payable	$ 41,000
Bonds Payable (due 2022)	450,000	Discount on Bonds Payable	13,500
Interest Payable (due next year)	1,700	Salaries Payable	3,100
Estimated Warranty Payable	1,500	Sales Tax Payable	700

Prepare the liabilities section of Master Suites's balance sheet at December 31, 2016.

S12-12 Computing the debt to equity ratio

Learning Objective 6

Richards Corporation has the following amounts as of December 31, 2016.

Total assets	$ 31,500
Total liabilities	17,500
Total equity	14,000

Compute the debt to equity ratio at December 31, 2016.

S12A-13 Using the time value of money

Learning Objective 7
Appendix 12A

Your grandfather would like to share some of his fortune with you. He offers to give you money under one of the following scenarios (you get to choose):

1. $8,000 per year at the end of each of the next five years
2. $50,250 (lump sum) now
3. $100,250 (lump sum) five years from now

Requirements

1. Calculate the present value of each scenario using an 8% discount rate. Which scenario yields the highest present value?
2. Would your preference change if you used a 12% discount rate?

S12A-14 Determining the present value of bond at issuance

Learning Objective 7
Appendix 12A

On December 31, 2016, when the market interest rate is 14%, McCann Realty issues $400,000 of 11.25%, 10-year bonds payable. The bonds pay interest semiannually. Determine the present value of the bonds at issuance.

S12B-15 Using the effective-interest amortization method

Learning Objective 8
Appendix 12B

On December 31, 2016, when the market interest rate is 10%, Timmony Realty issues $450,000 of 7.25%, 10-year bonds payable. The bonds pay interest semiannually. The present value of the bonds at issuance is $372,936.

Requirements

1. Prepare an amortization table using the effective interest amortization method for the first two semiannual interest periods. (Round all numbers to the nearest whole dollar.)
2. Using the amortization table prepared in Requirement 1, journalize issuance of the bonds and the first two interest payments.

S12B-16 Using the effective-interest amortization method

Learning Objective 8
Appendix 12B

On December 31, 2016, when the market interest rate is 16%, Bryant Realty issues $700,000 of 17.25%, 10-year bonds payable. The bonds pay interest semiannually. Bryant Realty received $743,262 in cash at issuance.

Requirements

1. Prepare an amortization table using the effective interest amortization method for the first two semiannual interest periods. (Round all numbers to the nearest whole dollar.)
2. Using the amortization table prepared in Requirement 1, journalize issuance of the bonds and the first two interest payments.

> Exercises

Assume bonds payable are amortized using the straight-line amortization method unless stated otherwise.

Learning Objective 1

2. Total Liabilities $52,680

E12-17 Accounting for long-term notes payable transactions

Consider the following note payable transactions of Caldwell Video Productions.

2016	
Oct. 1	Purchased equipment costing $80,000 by issuing a five-year, 8% note payable. The note requires annual principal payments of $16,000 plus interest each Oct. 1.
Dec. 31	Accrued interest on the note payable.
2017	
Oct. 1	Paid the first installment on the note.
Dec. 31	Accrued interest on the note payable.

Requirements

1. Journalize the transactions for the company.
2. Considering the given transactions only, what are Caldwell Video Productions' total liabilities on December 31, 2017?

Learning Objective 1

3. Interest Expense $4,333.33

E12-18 Preparing an amortization schedule and recording mortgages payable entries

Keel Company purchased a building and land with a fair market value of $575,000 (building, $475,000 and land, $100,000) on January 1, 2016. Keel signed a 25-year, 15% mortgage payable. Keel will make monthly payments of $7,364.78.

Requirements

1. Journalize the mortgage payable issuance on January 1, 2016 (explanations are not required).
2. Prepare an amortization schedule for the first two payments.
3. Journalize the first payment on January 31, 2016 (round to two decimal places).
4. Journalize the second payment on February 29, 2016 (round to two decimal places).

Learning Objective 2

E12-19 Analyzing alternative plans to raise money

AF Electronics is considering two plans for raising $1,000,000 to expand operations. Plan A is to issue 5% bonds payable, and plan B is to issue 600,000 shares of common stock. Before any new financing, AF has net income of $250,000 and 100,000 shares of common stock outstanding. Management believes the company can use the new funds to earn additional income of $500,000 before interest and taxes. The income tax rate is 20%. Analyze the AF Electronics situation to determine which plan will result in higher earnings per share.

Learning Objectives 2, 3

2. Market price $404,200

E12-20 Determining bond prices and interest expense

Havens is planning to issue $530,000 of 6%, fifteen-year bonds payable to borrow for a major expansion. The owner, Shane Havens, asks your advice on some related matters.

Requirements

1. Answer the following questions:
   a. At what type of bond price will Havens have total interest expense equal to the cash interest payments?
   b. Under which type of bond price will Havens's total interest expense be greater than the cash interest payments?
   c. If the market interest rate is 9%, what type of bond price can Havens expect for the bonds?
2. Compute the price of the bonds if the bonds are issued at 90.
3. How much will Havens pay in interest each year? How much will Havens's interest expense be for the first year?

E12-21 Journalizing bond issuance and interest payments

Learning Objective 3

1. June 30 Bonds Payable CR $60,000

On June 30, Prince Company issues 10%, 10-year bond payable with at face value of $90,000. The bonds are issued at face value and pay interest on June 30 and December 31.

Requirements

1. Journalize the issuance of the bonds on June 30.
2. Journalize the semiannual interest payment on December 31.

E12-22 Journalizing bond issuance and interest payments

Learning Objective 3

1. June 30 Discount DR $7,200

On June 30, Doherty Limited issues 6%, 20-year bonds payable with a face value of $120,000. The bonds are issued at 90 and pay interest on June 30 and December 31.

Requirements

1. Journalize the issuance of the bonds on June 30.
2. Journalize the semiannual interest payment and amortization of the bond discount on December 31.

E12-23 Journalizing bond transactions

Learning Objective 3

2. Interest Expense DR $3,440

Adam issued $40,000 of 1 0-year, 5% bonds payable on January 1, 2016. Adam pays interest each January 1 and July 1 and amortizes discount or premium by the straight-line amortization method. The company can issue its bonds payable under various conditions.

Requirements

1. Journalize Adam's issuance of the bonds and first semiannual interest payment assuming the bonds were issued at face value. Explanations are not required.
2. Journalize Adam's issuance of the bonds and first semiannual interest payment assuming the bonds were issued at 94. Explanations are not required.
3. Journalize Adam's issuance of the bonds and first semiannual interest payment assuming the bonds were issued at 105. Explanations are not required.
4. Which bond price results in the most interest expense for Adam? Explain in detail.

E12-24 Journalizing bond issuance and interest payments

Learning Objectives 3, 4

1. Premium CR $3,600

On January 1, 2016, Micheal Unlimited issues 15%, 15-year bonds payable with a face value of $230,000. The bonds are issued at 106 and pay interest on June 30 and December 31.

Requirements

1. Journalize the issuance of the bonds on January 1, 2016.
2. Journalize the semiannual interest payment and amortization of bond premium on June 30, 2016.
3. Journalize the semiannual interest payment and amortization of bond premium on December 31, 2016.
4. Journalize the retirement of the bond at maturity. (Give the date.)

Learning Objective 4

2. Cash CR $696,900

E12-25 Retiring bonds payable before maturity

Seaview Magazine issued $630,000 of 15-year, 7% callable bonds payable on July 31, 2016, at 97. On July 31, 2019, Seaview called the bonds at 102. Assume annual interest payments.

Requirements

1. Without making journal entries, compute the carrying amount of the bonds payable at July 31, 2019.
2. Assume all amortization has been recorded properly. Journalize the retirement of the bonds on July 31, 2019. No explanation is required.

Learning Objectives 2, 3, 5

E12-26 Reporting current and long-term liabilities

Orthopedic Dispensary borrowed $600,000 on January 2, 2016, by issuing a 12% serial bond payable that must be paid in three equal annual installments plus interest for the year. The first payment of principal and interest comes due January 2, 2017. Complete the missing information. Assume bonds are issued at face value.

	December 31		
	2016	**2017**	**2018**
Current Liabilities:			
Bonds Payable	$_______	$_______	$_______
Interest Payable	_______	_______	_______
Long-term Liabilities:			
Bonds Payable	_______	_______	_______

Learning Objectives 2, 3, 5

Total Liabilities $358,000

E12-27 Reporting liabilities

At December 31, MediShare Precision Instruments owes $55,000 on Accounts Payable, Salaries Payable of $13,000, and Income Tax Payable of $10,000. MediShare also has $230,000 of Bonds Payable that were issued at face value that require payment of a $35,000 installment next year and the remainder in later years. The bonds payable require an annual interest payment of $5,000, and MediShare still owes this interest for the current year. Report MediShare's liabilities on its classified balance sheet.

Learning Objective 6

E12-28 Computing the debt to equity ratio

Madsen Corporation has the following data as of December 31, 2016:

Total current liabilities	$ 41,640	Total stockholders' equity	$?
Total current assets	32,670	Other assets	37,400
Long-term liabilities	117,240	Property, plant, and equipment, net	221,210

Compute the debt to equity ratio at December 31, 2016.

Learning Objective 7
Appendix 12A

2. Present Value $71,329

E12A-29 Determining the present value of bonds payable

Interest rates determine the present value of future amounts. (Round all numbers to the nearest whole dollar.)

Requirements

1. Determine the present value of six-year bonds payable with face value of $84,000 and stated interest rate of 12%, paid semiannually. The market rate of interest is 12% at issuance.
2. Same bonds payable as in Requirement 1, but the market interest rate is 16%.
3. Same bonds payable as in Requirement 1, but the market interest rate is 10%.

Learning Objective 8
Appendix 12B

2. Interest Expense DR $6,208

E12B-30 Journalizing bond transactions using the effective-interest amortization method

Journalize issuance of the bond and the first semiannual interest payment under each of the following three assumptions. The company amortizes bond premium and discount by the effective-interest amortization method. Explanations are not required.

1. Ten-year bonds payable with face value of $86,000 and stated interest rate of 14%, paid semiannually. The market rate of interest is 14% at issuance. The present value of the bonds at issuance is $86,000.
2. Same bonds payable as in assumption 1, but the market interest rate is 16%. The present value of the bonds at issuance is $77,594.
3. Same bonds payable as in assumption 1, but the market interest rate is 8%. The present value of the bonds at issuance is $121,028.

> Problems Group A

Learning Objectives 1, 5

1. Mar. 1, 2017, Mortgage Payable DR $4,710

2. Total Liabilities $345,998

P12-31A Journalizing liability transactions and reporting them on the balance sheet

The following transactions of Smith Pharmacies occurred during 2016 and 2017:

2016	
Mar. 1	Borrowed $450,000 from Margate Bank. The fifteen-year, 10% note requires payments due annually, on March 1. Each payment consists of $30,000 principal plus one year's interest.
Dec. 1	Mortgaged the warehouse for $350,000 cash with Sadler Bank. The mortgage requires monthly payments of $8,000. The interest rate on the note is 9% and accrues monthly. The first payment is due on January 1, 2017.
31	Recorded interest accrued on the Sadler Bank note.
31	Recorded interest accrued on the Margate Bank note.
2017	
Jan. 1	Paid Sadler Bank monthly mortgage payment.
Feb. 1	Paid Sadler Bank monthly mortgage payment.
Mar. 1	Paid Sadler Bank monthly mortgage payment.
1	Paid first installment on note due to Margate Bank.

Requirements

1. Journalize the transactions in the Smith Pharmacies general journal. Round all answers to the nearest dollar. Explanations are not required.
2. Prepare the liabilities section of the balance sheet for Smith Pharmacies on March 1, 2017 after all the journal entries are recorded.

Learning Objectives 2, 3

2. Discount CR $4,500

P12-32A Analyzing, journalizing, and reporting bond transactions

Danny's Hamburgers issued 6%, 10-year bonds payable at 90 on December 31, 2016. At December 31, 2018, Danny reported the bonds payable as follows:

Long-term Liabilities:		
Bonds Payable	$ 200,000	
Less: Discount on Bonds Payable	16,000	$ 184,000

Danny's pays semiannual interest each June 30 and December 31.

Requirements

1. Answer the following questions about Danny's bonds payable:
   a. What is the maturity value of the bonds?
   b. What is the carrying amount of the bonds at December 31, 2018?
   c. What is the semiannual cash interest payment on the bonds?
   d. How much interest expense should the company record each year?
2. Record the June 30, 2018, semiannual interest payment and amortization of the discount.

P12-33A Analyzing and journalizing bond transactions

Learning Objectives 2, 3, 4

3. June 30, 2016, Interest Expense DR $16,400

On January 1, 2016, Mechanics Credit Union (MCU) issued 8%, 20-year bonds payable with face value of $900,000. The bonds pay interest on June 30 and December 31.

Requirements

1. If the market interest rate is 6% when MCU issues its bonds, will the bonds be priced at face value, at a premium, or at a discount? Explain.
2. If the market interest rate is 9% when MCU issues its bonds, will the bonds be priced at face value, at a premium, or at a discount? Explain.
3. The issue price of the bonds is 94. Journalize the following bond transactions:
   - **a.** Issuance of the bonds on January 1, 2016.
   - **b.** Payment of interest and amortization on June 30, 2016.
   - **c.** Payment of interest and amortization on December 31, 2016.
   - **d.** Retirement of the bond at maturity on December 31, 2035.

P12-34A Analyzing and journalizing bond transactions

Learning Objectives 2, 3, 4

June 30, 2016, Interest Expense DR $20,400

On January 1, 2016, Nurses Credit Union (NCU) issued 7%, 20-year bonds payable with face value of $400,000. The bonds pay interest on June 30 and December 31. The issue price of the bonds is 108.

Journalize the following bond transactions:

a. Issuance of the bonds on January 1, 2016.
b. Payment of interest and amortization on June 30, 2016.
c. Payment of interest and amortization on December 31, 2016.
d. Retirement of the bond at maturity on December 31, 2035.

P12-35A Reporting liabilities on the balance sheet and computing debt to equity ratio

Learning Objectives 5, 6

1. Total Liabilities $276,900

The accounting records of Router Wireless include the following as of December 31, 2016:

Accounts Payable	$ 69,000	Salaries Payable	$ 7,500
Mortgages Payable (long-term)	75,000	Bonds Payable (current portion)	25,000
Interest Payable	21,000	Premium on Bonds Payable	13,000
Bonds Payable (long-term)	63,000	Unearned Revenue (short-term)	3,400
Total Stockholders' Equity	160,000		

Requirements

1. Report these liabilities on the Router Wireless balance sheet, including headings and totals for current liabilities and long-term liabilities.
2. Compute Router Wireless's debt to equity ratio at December 31, 2016.

P12AB-36A Determining the present value of bonds payable and journalizing using the effective-interest amortization method

Learning Objectives 7, 8
Appendixes 12A, 12B

3. Jan. 1, 2016, Cash DR $529,170

Ben Norton issued $500,000 of 9%, 8-year bonds payable on January 1, 2016. The market interest rate at the date of issuance was 8%, and the bonds pay interest semiannually.

Requirements

1. How much cash did the company receive upon issuance of the bonds payable? (Round all numbers to the nearest whole dollar.)
2. Prepare an amortization table for the bond using the effective-interest method, through the first two interest payments. (Round all numbers to the nearest whole dollar.)
3. Journalize the issuance of the bonds on January 1, 2016, and payment of the first semiannual interest amount and amortization of the bond on June 30, 2016. Explanations are not required.

Learning Objectives 7, 8
Appendixes 12A, 12B

3. Jan. 1, 2016, Cash DR $557,025

P12AB-37A Determining the present value of bonds payable and journalizing using the effective-interest amortization method

Serenity, Inc. is authorized to issue 5%, 10-year bonds payable. On January 1, 2016, when the market interest rate is 8%, the company issues $700,000 of the bonds. The bonds pay interest semiannually.

Requirements

1. How much cash did the company receive upon issuance of the bonds payable? (Round all numbers to the nearest whole dollar.)
2. Prepare an amortization table for the bond using the effective-interest method, through the first two interest payments. (Round all numbers to the nearest whole dollar.)
3. Journalize the issuance of the bonds on January 1, 2016, and payment of the first semiannual interest amount and amortization of the bond on June 30, 2016. Explanations are not required.

> Problems Group B

Learning Objectives 1, 5

1. Jan. 1, 2017, Interest Payable DR $3,000
2. Total Liabilities $853,895

P12-38B Journalizing liability transactions and reporting them on the balance sheet

The following transactions of Emergency Pharmacies occurred during 2016 and 2017:

2016	
Mar. 1	Borrowed $330,000 from Longwood Bank. The six-year, 13% note requires payments due annually, on March 1. Each payment consists of $55,000 principal plus one year's interest.
Dec. 1	Mortgaged the warehouse for $600,000 cash with Sawyer Bank. The mortgage requires monthly payments of $10,000. The interest rate on the note is 6% and accrues monthly. The first payment is due on January 1, 2017.
31	Recorded interest accrued on the Sawyer Bank note.
31	Recorded interest accrued on the Longwood Bank note.
2017	
Jan. 1	Paid Sawyer Bank monthly mortgage payment.
Feb. 1	Paid Sawyer Bank monthly mortgage payment.
Mar. 1	Paid Sawyer Bank monthly mortgage payment.
1	Paid first installment on note due to Longwood Bank.

Requirements

1. Journalize the transactions in the Emergency Pharmacies general journal. Round all answers to the nearest dollar. Explanations are not required.
2. Prepare the liabilities section of the balance sheet for Emergency Pharmacies on March 1, 2017 after all the journal entries are recorded.

Learning Objectives 2, 3

2. Discount CR $2,000

P12-39B Analyzing, journalizing, and reporting bond transactions

Billy's Hamburgers issued 4%, 10-year bonds payable at 75 on December 31, 2016. At December 31, 2018, Billy reported the bonds payable as follows:

Long-term Liabilities:		
Bonds Payable	$ 200,000	
Less: Discount on Bonds Payable	40,000	$ 160,000

Billy's pays semiannual interest each June 30 and December 31.

Requirements

1. Answer the following questions about Billy's bonds payable:
   a. What is the maturity value of the bonds?
   b. What is the carrying amount of the bonds at December 31, 2018?
   c. What is the semiannual cash interest payment on the bonds?
   d. How much interest expense should the company record each year?
2. Record the June 30, 2018, semiannual interest payment and amortization of the discount.

Learning Objectives 2, 3, 4

3. June 30 Interest Expense DR $18,600

P12-40B Analyzing and journalizing bond transactions

On January 1, 2016, Agricultural Credit Union (ACU) issued 8%, 20-year bonds payable with face value of $800,000. The bonds pay interest on June 30 and December 31.

Requirements

1. If the market interest rate is 7% when ACU issues its bonds, will the bonds be priced at face value, at a premium, or at a discount? Explain.
2. If the market interest rate is 9% when ACU issues its bonds, will the bonds be priced at face value, at a premium, or at a discount? Explain
3. The issue price of the bonds is 92. Journalize the following bond transactions:
   a. Issuance of the bonds on January 1, 2016.
   b. Payment of interest and amortization on June 30, 2016.
   c. Payment of interest and amortization on December 31, 2016.
   d. Retirement of the bond at maturity on December 31, 2035.

Learning Objectives 2, 3, 4

June 30 Interest Expense DR $3,300

P12-41B Analyzing and journalizing bond transactions

On January 1, 2016, Engineers Credit Union (ECU) issued 6%, 20-year bonds payable with face value of $100,000. The bonds pay interest on June 30 and December 31. The issue price of the bonds is 101.

Journalize the following bond transactions:

a. Issuance of the bonds on January 1, 2016.
b. Payment of interest and amortization on June 30, 2016.
c. Payment of interest and amortization on December 31, 2016.
d. Retirement of the bond at maturity on December 31, 2035.

Learning Objectives 5, 6

1. Total Liabilities $268,900

P12-42B Reporting liabilities on the balance sheet and computing debt to equity ratio

The accounting records of Path Leader Wireless include the following as of December 31, 2016:

Accounts Payable	$ 75,000	Salaries Payable	$ 7,500
Mortgages Payable (long-term)	76,000	Bonds Payable (current portion)	21,000
Interest Payable	15,000	Premium on Bonds Payable	9,000
Bonds Payable (long-term)	62,000	Unearned Revenue (short-term)	3,400
Total Stockholders' Equity	180,000		

Requirements

1. Report these liabilities on the Path Leader Wireless balance sheet, including headings and totals for current liabilities and long-term liabilities.
2. Compute Path Leader Wireless's debt to equity ratio at December 31, 2016.

Learning Objectives 7, 8
Appendixes 12A, 12B

3. Jan. 1, 2016, Cash DR $595,123

P12AB-43B Determining the present value of bonds payable and journalizing using the effective-interest amortization method

Ben Nowak issued $500,000 of 11%, 9-year bonds payable on January 1, 2016. The market interest rate at the date of issuance was 8%, and the bonds pay interest semiannually.

Requirements

1. How much cash did the company receive upon issuance of the bonds payable? (Round all numbers to the nearest whole dollar.)
2. Prepare an amortization table for the bond using the effective-interest method, through the first two interest payments. (Round all numbers to the nearest whole dollar.)
3. Journalize the issuance of the bonds on January 1, 2016, and payment of the first semiannual interest amount and amortization of the bond on June 30, 2016. Explanations are not required.

Learning Objectives 7, 8
Appendixes 12A, 12B

3. Jan. 1, 2016, Cash DR $565,710

P12AB-44B Determining the present value of bonds payable and journalizing using the effective-interest amortization method

Spa, Inc. is authorized to issue 11%, 10-year bonds payable. On January 1, 2016, when the market interest rate is 12%, the company issues $600,000 of the bonds. The bonds pay interest semiannually.

Requirements

1. How much cash did the company receive upon issuance of the bonds payable? (Round all numbers to the nearest whole dollar.)
2. Prepare an amortization table for the bond using the effective-interest method, through the first two interest payments. (Round all numbers to the nearest whole dollar.)
3. Journalize the issuance of the bonds on January 1, 2016, and payment of the first semiannual interest amount and amortization of the bond on June 30, 2016. Explanations are not required.

> Continuing Problem

P12-45 Describing bonds and journalizing transactions for bonds payable using the straight-line amortization method

This problem continues the Daniels Consulting situation from Problem P11-35 of Chapter 11. Daniels Consulting is considering raising additional capital. Daniels plans to raise the capital by issuing $500,000 of 8%, seven-year bonds on January 1, 2017. The bonds pay interest semiannually on June 30 and December 31. On January 1, 2017, the market rate of interest required by investors for similar bonds is 10%.

Requirements

1. Will Daniels's bonds issue at face value, a premium, or a discount?
2. Calculate and record the cash received on the bond issue date.
3. Journalize the first interest payment on June 30 and amortize the premium or discount using the straight-line amortization method.

CRITICAL THINKING

> Decision Case 12-1

The following questions are not related.

Requirements

1. Duncan Brooks needs to borrow $500,000 to open new stores. Brooks can borrow $500,000 by issuing 5%, 10-year bonds at 96. How much will Brooks actually receive in cash under this arrangement? How much must Brooks pay back at maturity? How will Brooks account for the difference between the cash received on the issue date and the amount paid back?
2. Brooks prefers to borrow for longer periods when interest rates are low and for shorter periods when interest rates are high. Why is this a good business strategy?

> Ethical Issue 12-1

Raffie's Kids, a nonprofit organization that provides aid to victims of domestic violence, low-income families, and special-needs children, has a 30-year, 5% mortgage on the existing building. The mortgage requires monthly payments of $3,000. Raffie's bookkeeper is preparing financial statements for the board and, in doing so, lists the mortgage balance of $287,000 under current liabilities because the board hopes to be able to pay the mortgage off in full next year. Of the mortgage principal, $20,000 will be paid next year if Raffie's pays according to the mortgage agreement. The board members call you, their trusted CPA, to advise them on how Raffie's Kids should report the mortgage on its balance sheet. What is the ethical issue? Provide and discuss the reason for your recommendation.

> Fraud Case 12-1

Bill and Edna had been married two years and had just reached the point where they had enough savings to start investing. Bill's uncle Dave told them that he had recently inherited some very rare railroad bonds from his grandmother's estate. He wanted to help Bill and Edna get a start in the world and would sell them 50 of the bonds at $100 each. The bonds were dated 1873, beautifully engraved, showing a face value of $1,000 each. Uncle Dave pointed out that "United States of America" was printed prominently at the top and that the U.S. government had established a sinking fund to retire the old railroad bonds. A sinking fund is a fund established for the purpose of repaying the debt. It allows the organization (the U.S. government, in this example) to set aside money over time to retire the bonds. All Bill and Edna needed to do was hold on to them until the government contacted them, and they would eventually get the full $1,000 for each bond. Bill and Edna were overjoyed—until a year later when they saw the exact same bonds for sale at a coin and stamp shop priced as "collectors' items" for $9.95 each!

Requirements

1. If a company goes bankrupt, what happens to the bonds it issued and the investors who bought the bonds?
2. When investing in bonds, how can you tell whether the bond issue is a legitimate transaction?
3. Is there a way to determine the relative risk of corporate bonds?

> Financial Statement Case 12-1

Use the **Starbucks Corporation** financial statements to answer the following questions. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's Fiscal 2013 Annual Report.

Requirements

1. How much was Starbucks Corporation's long-term debt at September 29, 2013?
2. Compute Starbucks Corporation's debt to equity ratio at September 29, 2013. How does it compare to **Green Mountain Coffee Roasters, Inc.**?

> Quick Check Answers

1. a **2.** d **3.** b **4.** a **5.** a **6.** c **7.** a **8.** d **9A.** b **10B.** b

Stockholders' Equity

13

How Do We Raise More Cash?

Lacey Snyder and Alison Mason, stockholders of Sharemymovie.com, were reviewing the latest financial statements of their business. Sharemymovie.com, a video-sharing Web site in which users can upload, share, and view videos, started five years ago with a cash contribution from each owner and a small bank loan. In the past five years, the site has grown rapidly with more than 1 million video views each day. Lacey and Alison are excited about the success of the business, but the business has recently been experiencing growing pains.

With the increase in the number of users visiting the site and uploading new videos daily, Lacey and Alison know they need to invest in a new Web site design and purchase updated software. But these expansions will take cash, and they are reluctant to borrow more money from the bank. Lacey and Alison considered asking friends and family to invest in the business. They realized that in order to gain enough cash to meet the growing needs of the business, they would need a large influx of money. After talking to their accountant, they are considering expanding their corporation and taking their business public. In other words, the business will offer ownership (through stock) for anyone who is willing to invest.

By offering the opportunity to own a share in the business, Sharemymovie.com can quickly raise the necessary cash to meet its expansion needs. In addition, the corporate form of business offers liability protection for the stockholders. But there are also some disadvantages to the corporate form, such as double taxation and increased government regulation. As Lacey and Alison move forward with their decision, they need to understand the pros and cons of corporations and carefully evaluate the impact of this decision.

How Much Is the Business Worth?

On February 1, 2012, Facebook, Inc., the popular social media Web site, announced that it planned to issue shares of stock on the stock market under the ticker symbol FB. On May 18, Mark Zuckerberg, the mastermind behind Facebook, rang the opening bell of the stock exchange and shares of Facebook stock began selling at $42.05 per share. On that day, more than 500 million shares were sold and exchanged with an estimated market capitalization of more than $104 billion, one of the largest initial public offering (IPO) to date. It's interesting to note that in less than a month after its IPO, Facebook stock lost more than a quarter of its value and continues to fluctuate.

Why did Facebook decide to issue stock? What are the advantages and disadvantages of a corporation? How is stock reported on the financial statements? What does the drop in market price of the stock mean to Facebook? In this chapter, we explore the answers to these questions and many more. You learn why businesses decide to organize as a corporation and how to account for transactions unique to a corporation.

Chapter 13 Learning Objectives

1 Identify the characteristics of a corporation

2 Journalize the issuance of stock

3 Account for the purchase and sale of treasury stock

4 Account for cash dividends, stock dividends, and stock splits

5 Explain how equity is reported for a corporation

6 Use earnings per share, rate of return on common stock, and the price/earnings ratio to evaluate business performance

WHAT IS A CORPORATION?

Learning Objective 1
Identify the characteristics of a corporation

Corporation
A business organized under state law that is a separate legal entity.

As introduced in earlier chapters, a **corporation** is a business organized under state law that is a separate legal entity. Corporations dominate business activity in the United States. Most well-known companies are corporations and tend to be large multinational businesses.

Characteristics of Corporations

A corporation has many unique characteristics:

- **Separate legal entity—**A corporation is a separate legal entity. It is organized independently of its owners.
- **Number of owners—**Corporations have one or more owners (called stockholders). A *public* corporation is a corporation whose stock can be purchased on an organized stock exchange, such as the New York Stock Exchange or the NASDAQ Stock Market. Public corporations often have thousands of owners. Some corporations are *privately held*, which means that the stock cannot be purchased on a stock exchange. These corporations often have only a few stockholders.
- **No personal liability of the owner(s) for business's debts—**Stockholders are not personally liable for the debts of the corporation.
- **Lack of mutual agency—**Unlike a sole proprietorship and partnership, stockholders of the corporation are not mutual agents of the business. Stockholders cannot bind the business to a contract.
- **Indefinite life—**Corporations have an indefinite life. They can exist until the business decides to terminate. Withdrawal or death of an owner does not cause termination.
- **Taxation—**Corporations are separate taxable entities. The corporation pays the income tax on the business earnings and is also responsible for paying payroll taxes on employee salaries and wages. Corporations also experience double taxation. Double taxation occurs when corporations make cash payments (called dividends) to stockholders. These payments are taxed once as earnings of the corporation and then again when the stockholder receives the dividend. The tax is first paid by the corporation on its corporate income tax return, and then the dividends received by the stockholder are reported on the stockholder's personal income tax return.
- **Capital accumulation—**Corporations can raise more money than sole proprietorships and partnerships. This is completed through an initial public offering (IPO) and represents the initial offering of corporate shares of stock to the public.

Exhibit 13-1 summarizes the advantages and disadvantages of a corporation.

Exhibit 13-1 | **Corporations: Advantages and Disadvantages**

Advantages	Disadvantages
1. Corporations can raise more money than a proprietorship or partnership.	1. Ownership and management are often separated.
2. A corporation has a continuous life.	2. The earnings of a corporation may be subject to double taxation.
3. The transfer of corporate ownership is easy.	3. Government regulation is expensive.
4. There is no mutual agency among the stockholders and the corporation.	4. Start-up costs are higher than other business forms.
5. Stockholders have limited liability.	

Stockholders' Equity Basics

A corporation is created by filing a certificate of formation with a state. The state authorizes the business to be organized as a corporation and grants the entity a charter or articles of incorporation. The corporation then prepares a set of bylaws, which provide the rules and procedures that the corporation will follow.

The corporate charter of a corporation identifies the maximum number of shares of stock the corporation may issue, called **authorized stock**. The charter provides a state's permission for the corporation to operate. Authorized stock can be issued or unissued. **Issued stock** has been issued by the corporation but may or may not be held by stockholders. A corporation issues **stock certificates** to the stockholders when they buy the stock. The stock certificate represents the individual's ownership of the corporation's capital, so it is called **capital stock**. The basic unit of stock is a share. A corporation may issue a physical stock certificate for any number of shares. Today, many corporations issue the stocks electronically rather than printing a paper certificate. Exhibit 13-2 shows a stock certificate for 288 shares of Smart Touch Learning common stock owned by Courtney Edwards.

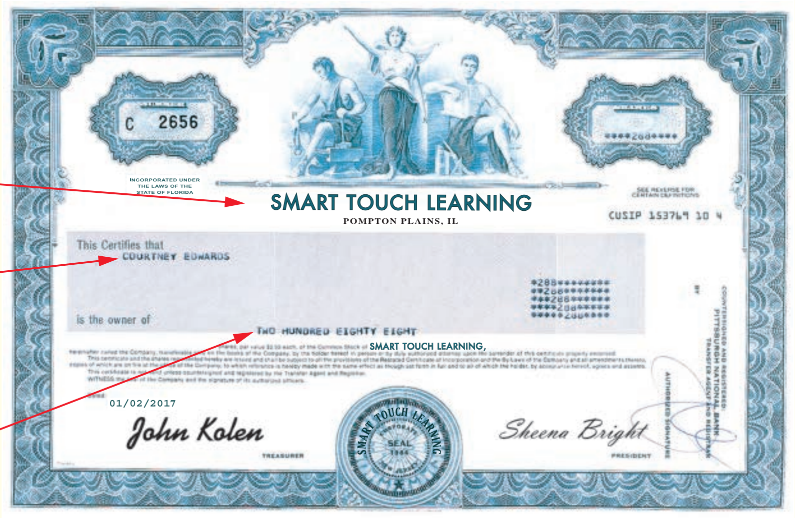
Authorized Stock
The maximum number of shares of stock that the corporate charter allows the corporation to issue.

Issued Stock
Stock that has been issued but may or may not be held by stockholders.

Stock Certificate
Paper evidence of ownership in a corporation.

Capital Stock
Represents the individual's ownership of the corporation's capital.

Exhibit 13-2 | **Stock Certificate**



C 2656

****288****

INCORPORATED UNDER THE LAWS OF THE STATE OF FLORIDA

SMART TOUCH LEARNING
POMPTON PLAINS, IL

SEE REVERSE FOR CERTAIN DEFINITIONS

CUSIP 153769 10 4

This Certifies that
COURTNEY EDWARDS

is the owner of

*288*********

TWO HUNDRED EIGHTY EIGHT

SMART TOUCH LEARNING,

01/02/2017

John Kolen
TREASURER

SMART TOUCH LEARNING CORPORATE SEAL

Sheena Bright
PRESIDENT

COUNTERSIGNED AND REGISTERED: PITTSBURGH NATIONAL BANK TRANSFER AGENT AND REGISTRAR

AUTHORIZED SIGNATURE

Company's name

Stockholder's name

Number of shares held by the stockholder

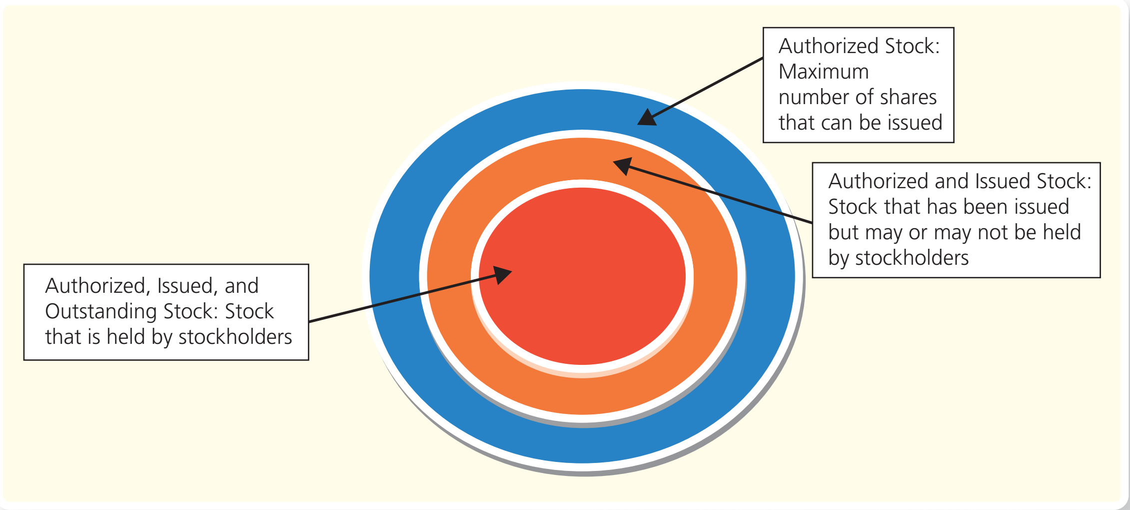
The certificate shows the following:

- Company name
- Stockholder name
- Number of shares owned by the stockholder

Outstanding Stock
Issued stock in the hands of stockholders.

Stock that is held by the stockholders is said to be **outstanding stock**. The outstanding stock of a corporation represents 100% of its ownership. The numbers of shares of authorized stock, issued stock, and outstanding stock are most likely going to be different amounts. Exhibit 13-3 explains the differences between these categories of stock.

Exhibit 13-3 | **Categories of Stock**



Stockholders' Rights

A stockholder has four basic rights, unless a right is withheld by contract:

Dividend
A distribution of a corporation's earnings to stockholders.

Preemptive Right
Stockholder's right to maintain his or her proportionate ownership in the corporation.

1. **Vote.** Stockholders participate in management indirectly by voting on corporate matters at stockholders' meetings (or sometimes through the mail or electronic voting). This is the only way in which a stockholder can help to manage the corporation. Normally, each share of basic ownership in the corporation carries one vote.
2. **Dividends.** Stockholders receive a proportionate part of any **dividend** that is declared and paid. A dividend is a distribution of a corporation's earnings to stockholders. Each share of stock receives an equal dividend so, for example, a shareholder who owns 1% of the total shares in the company receives 1% of any total dividend.
3. **Liquidation.** Stockholders receive their proportionate share of any assets remaining after the corporation pays its debts and liquidates (goes out of business).
4. **Preemptive right.** Stockholders have a **preemptive right** to maintain their proportionate ownership in the corporation. For example, suppose a stockholder owns 5% of a corporation's stock. If the corporation issues 100,000 new shares of stock, it must offer the stockholder the opportunity to buy 5% (5,000) of the new shares. This right, however, is usually withheld by contract for most corporations.

Capital Stock

Common Stock
Represents the basic ownership of a corporation.

Corporations can issue different classes of stock. The stock of a corporation may be either common or preferred. Every corporation issues **common stock**, which represents the basic ownership of the corporation. Some companies issue Class A common stock, which carries the right to vote. They may also issue Class B common stock, which may be nonvoting. There must be at least one voting class of stock. However, there is no limit as to the number or types of classes of stock that a corporation may issue. Each class of stock has a separate account in the company's ledger.

Preferred stock gives its owners certain advantages over common stock. Most notably, preferred stockholders receive a dividend preference over common stockholders. This ensures that if a corporation pays dividends, the preferred stockholders receive their dividends first. They also receive assets before common stockholders if the corporation liquidates. When dividends are declared, corporations pay a fixed dividend on preferred stock. The amount of the preferred dividend is printed on the face of the preferred stock certificate. Investors usually buy preferred stock to earn those fixed dividends. With these advantages, preferred stockholders take less investment risk than common stockholders.

Owners of preferred stock also have the four basic stockholder rights, unless a right is withheld. The right to vote, for example, is usually withheld from preferred stock. Companies may issue different series of preferred stock (Series A and Series B, for example). Each series is recorded in a separate account. Preferred stock is more rare than you might think. Many corporations have the authorization to issue preferred stock, but few actually issue the preferred shares.

Stock may carry a par value or it may be no-par stock. **Par value is an amount assigned by a company to a share of its stock. Most companies set par value low to avoid issuing their stock below par. The par value of a stock has no relation to the market value, which is the price at which the stock is bought and sold.**

The par value of preferred stock may be higher per share than common stock par values. Par value is arbitrary and is assigned when the organizers file the corporate charter with the state. There is no real reason for why par values vary. It is a choice made by the organizers of the corporation.

Some states allow the issuance of no-par stock. **No-par stock** does not have par value. No-par value stock has an advantage because there is no confusion between the par value and market value of the stock. **Stated value stock** is no-par stock that has been assigned an amount similar to par value. Stated value represents the minimum amount that the corporation can issue the stock for. Usually the state the company incorporates in will determine whether a stock may be par or stated value stock. For accounting purposes, par value stock is treated the same as stated value stock.

Preferred Stock
Stock that gives its owners certain advantages over common stockholders, such as the right to receive dividends before the common stockholders and the right to receive assets before the common stockholders if the corporation liquidates.

Par Value
An amount assigned by a company to a share of its stock.

Is the par value of a stock the price at which the stock is bought and sold?

No-Par Stock
Stock that has no amount (par) assigned to it.

Stated Value Stock
No-par stock that has been assigned an amount similar to par value.

Stockholders' Equity

A corporation's equity is called **stockholders' equity**. State laws require corporations to report their sources of owners' capital because some of the capital must be maintained by the company. The two basic sources of stockholders' equity are as follows:

- **Paid-in capital** (also called *contributed capital*) represents amounts received from the stockholders in exchange for stock. Common stock is the main source of paid-in capital. Paid-in capital is *externally* generated capital and results from transactions with outsiders.
- **Retained earnings** is equity earned by profitable operations that is not distributed to stockholders. Retained earnings is *internally* generated equity because it results from corporate decisions to retain net income to use in future operations or for expansion.

Stockholders' Equity
A corporation's equity that includes paid-in capital and retained earnings.

Paid-In Capital
Represents amounts received from the stockholders of a corporation in exchange for stock.

Retained Earnings
Equity earned by profitable operations of a corporation that is not distributed to stockholders.

Try It!

Match the key term to the definition.

1. Stock certificate	**a.** The maximum number of shares of stock that the corporate charter allows the corporation to issue.
2. Preemptive right	**b.** Stock that gives its owners certain advantages over common stockholders.
3. Authorized stock	**c.** Stockholders' right to maintain their proportionate ownership in the corporation.
4. Preferred stock	**d.** Represents amounts received from stockholders of a corporation in exchange for stock.
5. Paid-in capital	**e.** Paper evidence of ownership in a corporation.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S13-1. MyAccountingLab

HOW IS THE ISSUANCE OF STOCK ACCOUNTED FOR?

Learning Objective 2
Journalize the issuance of stock

Large corporations such as Intel Corporation and Nike, Inc. need huge quantities of money. They cannot finance all their operations through borrowing, so they raise capital by issuing stock. A company can sell its stock directly to stockholders, or it can use the services of an **underwriter**, such as the brokerage firms of Merrill Lynch & Co., Inc., Morgan Stanley, and JPMorgan Chase & Co. An underwriter usually assumes some of the risk of issuing stock by agreeing to buy all the stock the firm cannot sell to its clients. Stocks of public companies are bought and sold on a stock exchange, such as the New York Stock Exchange (NYSE) or NASDAQ Stock Market.

The amount that the corporation receives from issuing stock is called the **issue price**. Usually, the issue price exceeds par value because par value is normally set quite low.

Underwriter
A firm that handles the issuance of a company's stock to the public, usually assuming some of the risk by agreeing to buy the stock if the firm cannot sell all of the stock to its clients.

Issue Price
The price the stock initially sells for the first time it is sold.

Issuing Common Stock at Par Value

In this chapter, we will continue using Smart Touch Learning; however, we will now assume that Smart Touch Learning's common stock carries a par value of $1 per share and that the charter authorizes 20,000,000 shares of common stock. The stock issuance journal entry of 15,000 shares at par value would be as follows:

A↑	=	**L**	+	**E↑**
Cash↑				Common Stock↑

Date	Accounts and Explanation	Debit	Credit
	Cash	15,000	
	Common Stock—$1 Par Value ($1 per share × 15,000 shares)		15,000
	Issued common stock at par.		

Issuing Common Stock at a Premium

As stated previously, most corporations set par value low and issue common stock for a price above par. The amount above par is called a **premium**. Assume Smart Touch Learning issues an additional 3,000 shares for $5 per share. The $4 difference between the issue price ($5) and par value ($1) is a premium.

Premium
The amount above par at which a stock is issued.

A premium on the issue of stock is not a gain, income, or profit for the corporation because the company is dealing with its own stock. This situation illustrates one of the fundamentals of accounting in that a company cannot report a profit or loss when buying or selling its own stock. So, the premium is another type of paid-in capital account known as **Paid-In Capital in Excess of Par**. It is also called *additional paid-in capital*. The Paid-In Capital in Excess of Par account is an equity account that is reported on the balance sheet.

Paid-In Capital in Excess of Par
Represents amounts received from stockholders in excess of par value.

With a par value of $1, Smart Touch Learning's entry to record the issuance of 3,000 shares of its common stock at $5 per share is as follows:

Date	Accounts and Explanation	Debit	Credit
	Cash ($5 per share × 3,000 shares)	15,000	
	Common Stock—$1 Par Value ($1 per share × 3,000 shares)		3,000
	Paid-In Capital in Excess of Par—Common ($4 per share × 3,000 shares)		12,000
	Issued common stock at a premium.		

A↑	=	L	+	E↑
Cash↑				Common Stock↑ Paid-In Capital in Excess of Par↑

When stock is issued at a premium, common stock is always recorded at the par value. Any amount over par value is recorded to the Paid-In Capital in Excess of Par account.

Exhibit 13-4 shows how Smart Touch Learning would report stockholders' equity on its balance sheet after the stock issuances, assuming that the balance of Retained Earnings is $3,550.

Exhibit 13-4 | **Stockholders' Equity**

SMART TOUCH LEARNING, INC.
Balance Sheet (Partial)
December 31, 2016

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$1 Par Value; 20,000,000 shares authorized, 18,000 shares issued and outstanding	$ 18,000
Paid-In Capital in Excess of Par—Common	12,000
Total Paid-In Capital	30,000
Retained Earnings	3,550
Total Stockholders' Equity	**$ 33,550**

Issuing No-Par Common Stock

When a company issues no-par stock, it debits the asset received and credits the stock account. For no-par stock, there can be no Paid-In Capital in Excess of Par because there is no par to be in excess of.

Assume that, instead of $1 par value, Smart Touch Learning's common stock is no-par. How would that change the recording of the issuance of 15,000 shares for $1 and 3,000 shares for $5? The stock-issuance entries would be as follows:

A↑	=	L	+	E↑
Cash↑				Common Stock↑

A↑	=	L	+	E↑
Cash↑				Common Stock↑

Date	Accounts and Explanation	Debit	Credit
	Cash ($1 per share × 15,000 shares)	15,000	
	Common Stock—No-Par Value		15,000
	Issued no-par common stock.		
	Cash ($5 per share × 3,000 shares)	15,000	
	Common Stock— No-Par Value		15,000
	Issued no-par common stock.		

Regardless of the stock's issue price, Cash is debited and Common Stock is credited for the cash received. So, although the total paid-in capital of $30,000 remains the same, the Common Stock account differs from $18,000 (par stock) to $30,000 (no-par stock).

Exhibit 13-5 shows how the stockholders' equity section of the balance sheet would change.

Exhibit 13-5 | **Stockholders' Equity—No-Par Stock**

SMART TOUCH LEARNING, INC.
Balance Sheet (Partial)
December 31, 2016

Stockholders' Equity	
Paid-In Capital:	
Common Stock—No-Par Value; 20,000,000 shares authorized, 18,000 shares issued and outstanding	$ 30,000
Retained Earnings	3,550
Total Stockholders' Equity	**$ 33,550**

Issuing Stated Value Common Stock

Accounting for stated value common stock is almost identical to accounting for par value stock. The only difference is that stated value stock uses an account titled Paid-In Capital in Excess of *Stated* to record amounts received above the stated value.

For example, assume that instead of issuing 3,000 shares of $1 par value stock for $5 per share, Smart Touch Learning issues 3,000 shares of $1 *stated* value stock for $5 per share. Smart Touch Learning would record the following journal entry:

A↑	=	L	+	E↑
Cash↑				Common Stock↑ Paid-In Capital in Excess of Stated↑

Date	Accounts and Explanation	Debit	Credit
	Cash ($5 per share × 3,000 shares)	15,000	
	Common Stock—$1 Stated Value ($1 per share × 3,000 shares)		3,000
	Paid-In Capital in Excess of Stated—Common ($4 per share × 3,000 shares)		12,000
	Issued common stock at a premium.		

Issuing Common Stock for Assets Other Than Cash

A corporation may issue stock for assets other than cash. It records the transaction at the market value of the stock issued or the market value of the assets received, whichever is more clearly determinable. Now let's consider that Smart Touch Learning receives an additional contribution of furniture with a market value of $18,000 in exchange for 5,000 shares of its $1 par common stock. How would the entry be recorded?

Date	Accounts and Explanation	Debit	Credit
	Furniture	18,000	
	Common Stock—$1 Par Value ($1 par value × 5,000 shares)		5,000
	Paid-In Capital in Excess of Par—Common ($18,000 – $5,000)		13,000
	Issued common stock in exchange for furniture.		

A↑		L	+	E↑
Furniture↑	=			Common Stock↑ Paid-In Capital in Excess of Par↑

As you can see, the common stock is still recorded at its $1 par value and the difference between the market value of the furniture and the par value is recorded to the Paid-In Capital in Excess of Par account. The contributed asset is recorded at its current market value.

ETHICS

What should the building be valued at?

Reed Hiller, the accountant for Snyder Corporation, is trying to decide how to record the company's most recent issuance of stock. Jack Chavez, a majority stockholder, has contributed a building in exchange for common stock. Jack believes that the building should be valued at $4 million, his evaluation of the building's market value. Jack argues that by recording the asset at such a large amount, the business will look more prosperous to investors. Reed is concerned that Jack is overvaluing the asset. What should Reed do?

Solution

Issuance of stock for cash poses no ethical challenge because the value of the asset received (cash) is clearly understood. Issuing stock for assets other than cash can pose a challenge, though. A company should record an asset received at its current market value or the market value of the stock issued, whichever is more clearly determinable. One person's evaluation of a building's market value can differ from another's. Reed should encourage the company to hire an independent appraiser to determine the current market value of the building and then record the building at that value. Alternatively, the company can use the market value of the stock issued to determine the value of the building. This would be appropriate if the stock is traded on an organized exchange.

Issuing Preferred Stock

Accounting for preferred stock follows the pattern illustrated for issuing common stock. Assume that Smart Touch Learning has authorization from the state to issue 2,000 shares of preferred stock. Smart Touch Learning decides to issue 1,000 shares of its $50 par, 6% preferred stock on January 3, 2017, at $55 per share. (The 6% in the description of the preferred stock refers to the stated dividend associated with the stock and is explained later in the chapter.) The issuance entry would be as follows:

A↑		L	+	E↑
Cash↑	=			Preferred Stock↑ Paid-In Capital in Excess of Par↑

Date	Accounts and Explanation	Debit	Credit
Jan. 3	Cash ($55 per share × 1,000 shares)	55,000	
	Preferred Stock—$50 Par Value ($50 per share × 1,000 shares)		50,000
	Paid-In Capital in Excess of Par—Preferred ($5 per share × 1,000 shares)		5,000
	Issued preferred stock at a premium.		

Preferred Stock is included in the stockholders' equity section of the balance sheet and is often listed first. Any Paid-In Capital in Excess of Par—Preferred is listed next, followed by Common Stock and Paid-In Capital in Excess of Par—Common. Exhibit 13-6 shows the stockholders' equity section of Smart Touch Learning's balance sheet, assuming both stocks were par value stocks.

Exhibit 13-6 | **Stockholders' Equity**

SMART TOUCH LEARNING, INC.
Balance Sheet (Partial)
January 3, 2017

Stockholders' Equity	
Paid-In Capital:	
Preferred Stock—$50 Par Value; 2,000 shares authorized, 1,000 shares issued and outstanding	$ 50,000
Paid-In Capital in Excess of Par—Preferred	5,000
Common Stock—$1 Par Value; 20,000,000 shares authorized, 23,000 shares issued and outstanding	23,000
Paid-In Capital in Excess of Par—Common	25,000
Total Paid-In Capital	103,000
Retained Earnings	3,550
Total Stockholders' Equity	**$ 106,550**

Try It!

6. London Corporation has two classes of stock: Common, $1 par value; and Preferred, $4 par value. Journalize the issuance of 10,000 shares of common stock for $8 per share.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S13-2 through S13-5. MyAccountingLab

HOW IS TREASURY STOCK ACCOUNTED FOR?

A company's own stock that it has previously issued and later reacquired is called **treasury stock**. In effect, the corporation holds the stock in its treasury. A corporation, such as Smart Touch Learning, may purchase treasury stock for several reasons:

Learning Objective 3
Account for the purchase and sale of treasury stock

Treasury Stock
A corporation's own stock that it has previously issued and later reacquired.

1. Management wants to increase net assets by buying low and selling high.
2. Management wants to support the company's stock price.
3. Management wants to avoid a takeover by an outside party by reducing the number of outstanding shares that have voting rights.
4. Management wants to reward valued employees with stock.

Treasury Stock Basics

Here are the basics of accounting for treasury stock:

- The Treasury Stock account has a normal debit balance, which is the opposite of the other stockholders' equity accounts. Therefore, *Treasury Stock is a contra equity account*.
- Treasury stock is recorded at cost (what the company paid to reacquire the shares), without reference to par value. (We illustrate the *cost* method of accounting for treasury stock because it is used most widely. Intermediate accounting courses also cover an alternative method.)
- The Treasury Stock account is reported beneath Retained Earnings on the balance sheet as a reduction to total stockholders' equity.

Treasury stock decreases the company's stock that is outstanding—held by outsiders (the stockholders). Therefore, outstanding stock is issued stock less treasury stock. Only outstanding shares have voting rights and receive cash or stock dividends. Treasury stock does not carry a vote, and it receives no cash or stock dividends. Now we illustrate how to account for treasury stock, continuing with Smart Touch Learning.

Purchase of Treasury Stock

Review Smart Touch Learning's stockholders' equity before purchasing treasury stock as shown in Exhibit 13-6.

Assume that on March 31, Smart Touch Learning purchased 1,000 shares of previously issued common stock, paying $5 per share. To record the purchase, the company debits Treasury Stock—Common and credits Cash:

Date	Accounts and Explanation	Debit	Credit
Mar. 31	Treasury Stock—Common ($5 per share × 1,000 shares)	5,000	
	Cash		5,000
	Purchased treasury stock.		

A↓	=	L	+	E↓
Cash↓				Treasury Stock↑

Sale of Treasury Stock

Companies buy their treasury stock and eventually resell or retire it. A company may resell treasury stock at, above, or below its cost (what the company paid for the shares).

Sale at Cost

If treasury stock is sold for cost—the same price the corporation paid for it—there is no difference between the cost per share and the sale price per share to journalize. Assume Smart Touch Learning resells 100 of the treasury shares on April 1 for $5 each. The entry follows:

A↑	=	L	+	E↑
Cash↑	=			Treasury Stock↓

Date	Accounts and Explanation	Debit	Credit
Apr. 1	Cash	500	
	Treasury Stock—Common ($5 per share × 100 shares)		500
	Sold treasury stock at cost.		

Treasury Stock—Common

Mar. 31	5,000		
		500	Apr. 1
Bal.	4,500		

Sale Above Cost

If treasury stock is resold for more than cost, the difference is credited to a new stockholders' equity account, Paid-In Capital from Treasury Stock Transactions. This excess is additional paid-in capital because it came from the company's stockholders. It has no effect on net income. Suppose Smart Touch Learning resold 200 of its treasury shares for $6 per share on April 2 (recall that cost was $5 per share). The entry to resell treasury stock for an amount above cost is as follows:

A↑	=	L	+	E↑
Cash↑	=			Treasury Stock↓ Paid-In Capital from Treasury Stock Transactions↑

Date	Accounts and Explanation	Debit	Credit
Apr. 2	Cash ($6 per share × 200 shares)	1,200	
	Treasury Stock—Common ($5 per share × 200 shares)		1,000
	Paid-In Capital from Treasury Stock Transactions ($1 per share × 200 shares)		200
	Sold treasury stock above cost.		

Treasury Stock—Common

Mar. 31	5,000		
		500	Apr. 1
		1,000	Apr. 2
Bal.	3,500		

Paid-In Capital from Treasury Stock Transactions

		200	Apr. 2

Paid-In Capital from Treasury Stock Transactions is reported with the other paid-in capital accounts on the balance sheet, beneath Common Stock and Paid-In Capital in Excess of Par.

Sale Below Cost

The resale price of treasury stock can be less than cost. The shortfall is debited first to Paid-In Capital from Treasury Stock Transactions. However, this account can only be debited for an amount that brings it to 0 (it can not have a debit balance). If this account's balance is too small, Retained Earnings is debited for the remaining amount. To illustrate, assume Smart Touch Learning had two additional treasury stock sales. First, on April 3, Smart Touch Learning resold 200 treasury shares for $4.30 each. The entry to record the resale is as follows:

Date	Accounts and Explanation	Debit	Credit
Apr. 3	Cash ($4.30 per share × 200 shares)	860	
	Paid-In Capital from Treasury Stock Transactions ($0.70 per share × 200 shares)	140	
	Treasury Stock—Common ($5 per share × 200 shares)		1,000
	Sold treasury stock below cost.		

A↑	=	L	+	E↑
Cash↑				Paid-In Capital from Treasury Stock Transactions↓ Treasury Stock↓

Treasury Stock—Common

Mar. 31	5,000		
		500	Apr. 1
		1,000	Apr. 2
		1,000	Apr. 3
Bal.	2,500		

Paid-In Capital from Treasury Stock Transactions

Apr. 3	140	200	Apr. 2
		60	Bal.

The treasury shares were sold for $140 less than their cost. Smart Touch Learning had previously sold treasury shares for $200 more than their cost, so the $200 credit balance in Paid-In Capital from Treasury Stock Transactions is large enough to cover the $140 debit.

Now, what happens if Smart Touch Learning resells an additional 200 treasury shares for $4.50 each on April 4? Smart Touch Learning records the following entry:

Date	Accounts and Explanation	Debit	Credit
Apr. 4	Cash ($4.50 per share × 200 shares)	900	
	Paid-In Capital from Treasury Stock Transactions	60	
	Retained Earnings ($1,000 – $900 – $60)	40	
	Treasury Stock—Common ($5 per share × 200 shares)		1,000
	Sold treasury stock below cost.		

A↑	=	L	+	E↑
Cash↑				Paid-In Capital from Treasury Stock Transactions↓ Retained Earnings↓ Treasury Stock↓

Treasury Stock—Common

Mar. 31	5,000		
		500	Apr. 1
		1,000	Apr. 2
		1,000	Apr. 3
		1,000	Apr. 4
Bal.	1,500		

Paid-In Capital from Treasury Stock Transactions

Apr. 3	140	200	Apr. 2
Apr. 4	60		
		0	Bal.

Retained Earnings

		3,550	Bal.
Apr. 4	40		
		3,510	Bal.

The 200 treasury shares are sold for $100 less than their cost [($4.50 sales price per share minus $5 cost per share) × 200 shares]. However, only $60 remains in Paid-In Capital from Treasury Stock Transactions. The difference of $40 ($100 − $60) is debited to Retained Earnings because the paid-in capital accounts cannot have debit balances.

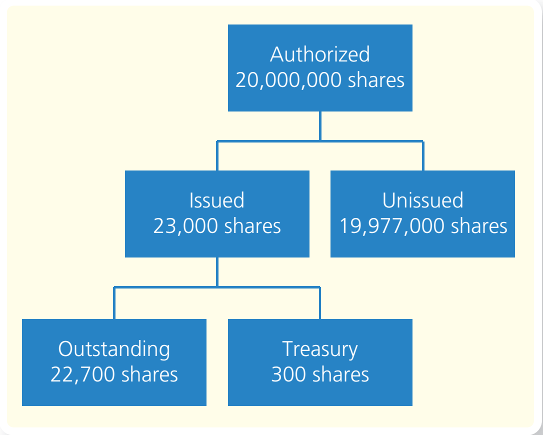
Now we can show the revised stockholders' equity for Smart Touch Learning as shown in Exhibit 13-7.

Exhibit 13-7 | **Stockholders' Equity After Treasury Stock Transactions**

SMART TOUCH LEARNING, INC.
Balance Sheet (Partial)
April 4, 2017

Stockholders' Equity	
Paid-In Capital:	
Preferred Stock—$50 Par Value; 2,000 shares authorized, 1,000 shares issued and outstanding	$ 50,000
Paid-In Capital in Excess of Par—Preferred	5,000
Common Stock—$1 Par Value; 20,000,000 shares authorized, 23,000 shares issued, 22,700 shares outstanding	23,000
Paid-In Capital in Excess of Par—Common	25,000
Total Paid-In Capital	103,000
Retained Earnings	3,510
Treasury Stock—Common; 300 shares at cost	(1,500)
Total Stockholders' Equity	**$ 105,010**

So, how many common shares are outstanding on April 4? The 23,000 common shares previously issued minus 300 treasury shares equals 22,700 outstanding common shares.



Retirement of Stock

Not all companies repurchase their previously issued stock to hold it in the treasury. A corporation may retire its stock by canceling the stock certificates. Retired stock cannot be reissued.

Retirements of preferred stock are common as companies seek to avoid paying the preferred dividends. To repurchase previously issued stock for retirement, we debit the stock accounts—for example, Preferred Stock and Paid-In Capital in Excess of Par—Preferred—and credit Cash. That removes the retired stock from the company's books, which reduces total assets and total stockholders' equity.

Try It!

7. On January 3, Halsall Corporation purchased 2,000 shares of the company's $2 par value common stock as treasury stock, paying cash of $8 per share. On January 30, Halsall sold 1,200 shares of the treasury stock for cash of $10 per share. Journalize these transactions.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S13-6. MyAccountingLab

HOW ARE DIVIDENDS AND STOCK SPLITS ACCOUNTED FOR?

Learning Objective 4
Account for cash dividends, stock dividends, and stock splits

A profitable corporation may make distributions to stockholders in the form of *dividends*. Dividends can be paid in the form of cash, stock, or other property.

Cash Dividends

Cash dividends cause a decrease in both assets (Cash) and equity (Retained Earnings). Most states prohibit using paid-in capital for dividends. Accountants, therefore, use the term **legal capital** to refer to the portion of stockholders' equity that cannot be used for dividends.

Legal Capital
The portion of stockholders' equity that cannot be used for dividends.

A corporation declares a dividend before paying it. Three dividend dates are relevant:

1. **Declaration date.** On the declaration date—say, May 1—the board of directors announces the intention to pay the dividend. The declaration of a cash dividend creates an obligation (liability) for the corporation.
2. **Date of record** (or *record date*). Those stockholders holding the stock at the end of business on the date of record—a week or two after declaration, say, May 15—will receive the dividend check. Date of record is the date the corporation records the stockholders that receive dividend checks.
3. **Payment date.** Payment of the dividend usually follows the record date by a week or two—say, May 30.

Declaring and Paying Dividends—Common Stock

Suppose on May 1, Smart Touch Learning declares a $0.05 per share cash dividend on 22,700 outstanding shares of common stock (23,000 shares issued less 300 shares of treasury stock). On the date of declaration, Smart Touch Learning records a debit to Cash Dividends and a credit to Dividends Payable—Common (a current liability) as follows:

Date	Accounts and Explanation	Debit	Credit
May 1	Cash Dividends ($0.05 per share × 22,700 shares)	1,135	
	Dividends Payable—Common		1,135
	Declared a cash dividend.		

A	=	L↑	+	E↓
		Dividends Payable↑		Cash Dividends↑

Dividends are only paid on outstanding shares. Remember that outstanding stock is issued stock less treasury stock. A corporation will never pay dividends on treasury stock.

On May 15, the date of record, no journal entry is recorded. This is simply the cutoff point to determine who owns the stock and will, therefore, receive the cash payment. To pay the dividend on the payment date, May 30, Smart Touch Learning debits Dividends Payable—Common and credits Cash:

A↓		**L↓**	+	**E**
Cash↓	=	Dividends Payable↓		

Date	Accounts and Explanation	Debit	Credit
May 30	Dividends Payable—Common	1,135	
	Cash		1,135
	Payment of cash dividend.		

At the end of the accounting period, Smart Touch Learning will close the Cash Dividends account to Retained Earnings as follows:

A		**L**	+	**E↑↓**
	=			Retained Earnings↓ Cash Dividends↓

Date	Accounts and Explanation	Debit	Credit
Dec. 31	Retained Earnings	1,135	
	Cash Dividends		1,135
	To close Cash Dividends.		

Declaring and Paying Dividends—Preferred Stock

The cash dividend rate on preferred stock is often expressed as a percentage of the preferred stock par value, such as 6%. Sometimes, however, cash dividends on preferred stock are expressed as a flat dollar amount per share, such as $3 per share. Therefore, preferred dividends are computed two ways, depending on how the preferred stock cash dividend rate is stated on the preferred stock certificate. To illustrate, assume a fictitious company, Greg's Games, Inc. has 1,000 outstanding shares of 6%, $50 par value preferred stock. The dividend is computed as follows:

Preferred dividend = Outstanding shares × Par value × Preferred dividend rate
= 1,000 shares × $50 par value per share × 6%
= $3,000

The journal entries to account for the declaration and payment of a cash dividend on preferred stock are similar to those of common stock. The only difference is that Dividends Payable—Preferred is used instead of Dividends Payable—Common.

Earlier in the chapter, we discussed the dividend preference that preferred stockholders receive. When a company has issued both preferred and common stock, the preferred stockholders receive their dividends first. The common stockholders receive dividends only if the total dividend is large enough to satisfy the preferred requirement. In other words, the common stockholders receive the residual—the amount remaining after the preferred dividends are paid.

For example, if Greg's Games has 1,000 shares of $50 par, 6% preferred stock outstanding and 2,000,000 shares of $1 par common stock outstanding, preferred stockholders will receive $3,000 of any cash dividend declared. So, total declared dividends must exceed $3,000 for the common stockholders to receive a dividend.

If the year's dividend is equal to or less than the annual preferred amount, the preferred stockholders will receive the entire dividend, and the common stockholders will not receive a dividend that year. But, if Greg's Games' dividend is large enough to cover the preferred dividend, the preferred stockholders get their regular dividend of $3,000, and the common stockholders receive any amount remaining.

Remember that a dividend preference on preferred stock does not guarantee that a corporation will pay a dividend equal to the preferred amount. A corporation may fail to pay the preferred dividend if, for example, it does not have cash to fund the dividend. This is called *passing the dividend*, and the dividend is said to be a **dividend in arrears**. In other words, a preferred stock dividend is in arrears if the dividend has not been paid for the year.

Preferred stock can be either cumulative or noncumulative. Most preferred stock is cumulative. As a result, preferred stock is assumed to be cumulative unless it is specifically designated as noncumulative. **Cumulative preferred stock** shareholders must receive all dividends in arrears plus the current year dividends before the common stockholders receive a dividend. If the preferred stock is **noncumulative preferred stock**, the corporation will not have any dividends in arrears because the corporation is not required to pay passed dividends.

Dividend in Arrears
A preferred stock dividend is in arrears if the dividend has not been paid for the year and the preferred stock is cumulative.

Cumulative Preferred Stock
Preferred stock whose owners must receive all dividends in arrears plus the current year dividend before the corporation pays dividends to the common stockholders.

Noncumulative Preferred Stock
Preferred stock whose owners do not receive passed dividends.

Suppose Greg's Games' preferred stock is cumulative and in 2016 the business did not pay any cash dividends. Before paying any common dividend in 2017, Greg's Games must first pay preferred dividends of $3,000 for 2016 and $3,000 for 2017, a total of $6,000. Assume that on September 6, 2017, Greg's Games declares a $50,000 total dividend. How much of this dividend goes to the preferred stockholders? How much goes to the common stockholders? The allocation of this $50,000 dividend is as follows:

Total Dividend		$ 50,000
Dividend to Preferred Stockholders:		
Dividend in Arrears (2016)	$ 3,000	
Current Year Dividend (2017)	3,000	
Total Dividend to Preferred Stockholders		(6,000)
Dividend to Common Stockholders		$ 44,000

Greg's Games' entry to record the declaration of this dividend on September 6, 2017, is as follows:

Date	Accounts and Explanation	Debit	Credit
2017			
Sep. 6	Cash Dividends	50,000	
	Dividends Payable—Common		44,000
	Dividends Payable—Preferred		6,000
	Declared a cash dividend.		

A	=	**L↑**	+	**E↓**
		Dividends Payable↑		Cash Dividends↑

Dividends in arrears are *not* a liability. A liability for dividends arises only after the board of directors *declares* the dividend. But a corporation reports cumulative preferred dividends in arrears in notes to the financial statements. This shows the common stockholders how big the declared dividend will need to be for them to receive any dividends.

Remember that if the preferred stock is noncumulative preferred stock, the corporation is not required to pay any passed dividends. Keep in mind that this is a risk that the investor bears when investing in noncumulative preferred stock. Suppose Greg's

Games' preferred stock is noncumulative and the company passed the 2016 dividend. The preferred stockholders would lose the 2016 dividend of $3,000 forever. Then, before paying any common dividends in 2017, Greg's Games would have to pay only the 2017 preferred dividend of $3,000, which would leave $47,000 for the common stockholders as follows:

Total Dividend		$ 50,000
Dividend to Preferred Stockholders:		
Current Year Dividend (2017)	$ 3,000	
Total Dividend to Preferred Stockholders		(3,000)
Dividend to Common Stockholders		$ 47,000

Stock Dividends

Stock Dividend
A distribution by a corporation of its own stock to its stockholders.

A **stock dividend** is a distribution of a corporation's own stock to its stockholders. Unlike cash dividends, stock dividends do not give any of the corporation's assets, like cash, to the stockholders. Stock dividends have the following characteristics:

- They affect *only* stockholders' equity accounts (including Retained Earnings, Stock Dividends, Common Stock, and Paid-In Capital in Excess of Par).
- They have *no* effect on total stockholders' equity.
- They have *no* effect on assets or liabilities.

The corporation distributes stock dividends to stockholders in proportion to the number of shares the stockholders already own. Suppose a stockholder owns 1,000 shares of Greg's Games' common stock. If Greg's Games distributes a 10% stock dividend, the stockholder would receive 100 additional shares (1,000 shares × 0.10). The stockholder now owns 1,100 shares of the stock. All other Greg's Games' stockholders also receive additional shares equal to 10% of their stock holdings, so all stockholders are in the same relative position after the stock dividend as they were before. With a stock dividend, the total number of shares issued and outstanding increases, but the percentage of total ownership of individual stockholders stays the same.

Why Issue Stock Dividends?

A company issues stock dividends for several reasons:

- **To continue dividends but conserve cash.** A company may wish to continue the distribution of dividends to keep stockholders happy but may need to keep its cash for operations. A stock dividend is a way to do so without using corporate cash.
- **To reduce the market price per share of its stock.** Depending on its size, a stock dividend may cause the company's market price per share to fall because of the increased supply of the stock. Suppose that a share of Greg's Games' stock was traded at $50 recently. Doubling the shares issued and outstanding by issuing a stock dividend would likely cause Greg's Games' stock market price per share to drop to closer to $25 per share. One objective behind a stock dividend might be to make the stock less expensive and, therefore, more available and attractive to investors.
- **To reward investors.** Investors often feel like they have received something of value when they get a stock dividend.

DECISIONS

Should a cash dividend be paid?

In the past, Valley Mills Construction, Inc. has always paid an annual cash dividend of $0.25 per share. This year, though, the board of directors wants to conserve cash for expansion. The board is considering not paying the cash dividends but is concerned that stockholders will be upset when the announcement to not pay a dividend is made. What should the board do?

Solution

The board of directors should carefully weigh the benefits of paying a cash dividend versus conserving cash for future expansion. If stockholders are angry enough about the failure to pay a dividend, they might consider selling their stock, causing the market value of the stock to decrease. In addition, the market might perceive the failure to pay a cash dividend as a negative statement on the company's financial health. Investors might perceive Valley Mills Construction, Inc. as having liquidity problems.

Alternative Solution

Valley Mills Construction, Inc. could consider issuing a stock dividend. Issuing stock dividends is a good alternative to issuing cash dividends when a corporation needs to conserve cash. By issuing a stock dividend, the corporation will issue additional shares of common stock to its stockholders. Stockholders will receive an increase in the number of shares of their stock, but their percentage of total ownership will remain the same. Stockholders will most likely feel that they have received something of value even though they didn't receive cash.

Recording Stock Dividends

As with a cash dividend, there are three dates for a stock dividend:

- Declaration date
- Record date
- Distribution date

The board of directors announces the stock dividend on the declaration date. The date of record and the distribution date then follow. The declaration of a stock dividend does *not* create a liability because the corporation is not obligated to pay assets. (Recall that a liability is a claim on *assets*.) With a stock dividend, the corporation has declared its intention to distribute its stock. The distribution date is similar to the payment date for a cash dividend. With stock dividends, however, there is no payment of cash—only a distribution of shares of stock.

The entry to record a stock dividend depends on the size of the dividend. Generally Accepted Accounting Principles (GAAP) distinguish between small and large stock dividends in the following manner:

- **Small stock dividend**—less than 20% to 25% of issued and outstanding stock
- **Large stock dividend**—greater than 20% to 25% of issued and outstanding stock

Small Stock Dividend
A stock dividend of less than 20% to 25% of the issued and outstanding stock.

Large Stock Dividend
A stock dividend greater than 20% to 25% of the issued and outstanding stock.

Small Stock Dividends—Less than 20% to 25% Small stock dividends are accounted for at the stock's market value. Here is how the various accounts are affected at the date of declaration:

- Stock Dividends is debited for the *market value* of the dividend shares.
- Common Stock Dividend Distributable is credited for the dividend stock's *par value*.
- Paid-In Capital in Excess of Par is credited for the excess.

Assume, for example, that Greg's Games distributes a 5% common stock dividend on 2,000,000 shares issued and outstanding when the market value of Greg's Games' common stock is $50 per share. Greg's Games will issue 100,000 (2,000,000 shares × 0.05) shares to its stockholders. The entry on the next page illustrates the accounting for this 5% stock dividend on the declaration date of February 1.

A = **L** + **E↑↓**
Stock Dividends↑
Common Stock Dividend Distributable↑
Paid-In Capital in Excess of Par↑

Date	Accounts and Explanation	Debit	Credit
Feb. 1	Stock Dividends ($50 per share × 2,000,000 shares × 0.05)	5,000,000	
	Common Stock Dividend Distributable ($1 per share × 2,000,000 shares × 0.05)		100,000
	Paid-In Capital in Excess of Par—Common ($5,000,000 − $100,000)		4,900,000
	Declared a 5% stock dividend.		

Similar to Cash Dividends, Stock Dividends is closed to Retained Earnings at the end of the accounting period.

Notice that Common Stock Dividend Distributable is credited for the par value of the common stock. Common Stock Dividend Distributable is an *equity* account, not a liability. It is reported as an addition to paid-in capital in stockholders' equity until the stock is distributed. On February 25, when Greg's Games distributes the common stock, it would record the following entry:

A = **L** + **E↑↓**
Common Stock Dividend Distributable↓
Common Stock↑

Date	Accounts and Explanation	Debit	Credit
Feb. 25	Common Stock Dividend Distributable	100,000	
	Common Stock—$1 Par Value		100,000
	Issued 5% stock dividend.		

After the journal entry for the declaration and issuance of the common stock dividend and the closing entry to close Stock Dividends to Retained Earnings, Greg's Games' accounts are as follows:

Common Stock—$1 Par Value

		2,000,000	Bal.
		100,000	Feb. 25
		2,100,000	Bal.

Paid-In Capital in Excess of Par—Common

		19,000,000	Bal.
		4,900,000	Feb. 1
		23,900,000	Bal.

Common Stock Dividend Distributable

		100,000	Feb. 1
Feb. 25	100,000		
		0	Bal.

Retained Earnings

		9,000,000	Bal.
Dec. 31	5,000,000		
		4,000,000	Bal.

The stock Dividends account is closed with a credit and the corresponding debit to Retained Earnings decreases the equity account.

Remember that a stock dividend does not affect assets, liabilities, or *total* stockholders' equity. A stock dividend merely rearranges the balances in the stockholders' equity accounts, leaving total stockholders' equity unchanged. Exhibit 13-8 shows what Greg's Games' stockholders' equity looks like before and after the 5% common stock dividend.

Exhibit 13-8 Stockholders' Equity—Small Stock Dividend

GREG'S GAMES, INC. Balance Sheet (Partial) February 25, 2017			
Before Small Stock Dividend:		**After Small Stock Dividend:**	
Stockholders' Equity		**Stockholders' Equity**	
Paid-In Capital:		Paid-In Capital:	
Preferred Stock—$50 Par Value; 2,000 shares authorized, 1,000 shares issued and outstanding	$ 50,000	Preferred Stock—$50 Par Value; 2,000 shares authorized, 1,000 shares issued and outstanding	$ 50,000
Paid-In Capital in Excess of Par—Preferred	5,000	Paid-In Capital in Excess of Par—Preferred	5,000
Common Stock—$1 Par Value; 20,000,000 shares authorized, 2,000,000 shares issued and outstanding	2,000,000	Common Stock—$1 Par Value; 20,000,000 shares authorized, 2,100,000 shares issued and outstanding	2,100,000
Paid-In Capital in Excess of Par—Common	19,000,000	Paid-In Capital in Excess of Par—Common	23,900,000
Total Paid-In Capital	21,055,000	Total Paid-In Capital	26,055,000
Retained Earnings	9,000,000	Retained Earnings	4,000,000
Total Stockholders' Equity	**$ 30,055,000**	Total Stockholders' Equity	**$ 30,055,000**

Note that total stockholders' equity stays at $30,055,000. Total paid-in capital increased $5,000,000 and retained earnings decreased $5,000,000.

Large Stock Dividends—Greater than 20% to 25% Large stock dividends are rare, but when they are declared, they are normally accounted for at the stock's par value instead of the stock's market value. Par value is used because the larger number of issued and outstanding shares will reduce market price per share, making market price per share an invalid measurement of the stock dividend value. Assume, for example, on March 2 that Greg's Games declares a second common stock dividend of 50% when the market value of Greg's Games' common stock is $50 per share. The entries to record the large stock dividend on the declaration date (March 2) and distribution date (March 30) are as follows:

Date	Accounts and Explanation	Debit	Credit
Mar. 2	Stock Dividends ($1 per share × 2,100,000 shares × 0.50)	1,050,000	
	Common Stock Dividend Distributable ($1 per share × 2,100,000 shares × 0. 50)		1,050,000
	Declared a 50% stock dividend.		
30	Common Stock Dividend Distributable	1,050,000	
	Common Stock—$1 Par Value		1,050,000
	Issued 50% stock dividend.		

Cash dividends and stock dividends are always declared based on the number of shares issued and outstanding. It's important to keep a running balance of the amount of shares outstanding in order to determine the correct amount of dividends to record. In this case, Greg's Games started with 2,000,000 common shares outstanding and then issued a stock dividend of 100,000 common shares for a total of 2,100,000 common shares issued and outstanding.

A = **L** + **E↑↓**
Stock Dividends↑
Common Stock Dividend Distributable↑

A = **L** + **E↑↓**
Common Stock Dividend Distributable↓
Common Stock↑

Notice that the large stock dividend also does not change total stockholders' equity. Total paid-in capital increased $1,050,000 and retained earnings decreased $1,050,000 after closing Stock Dividends to Retained Earnings.

Stock Splits

Stock Split
An increase in the number of issued and outstanding shares of stock coupled with a proportionate reduction in the par value of the stock.

A stock split is fundamentally different from a stock dividend. A **stock split** increases the number of issued and outstanding shares of stock. A stock split also decreases par value per share, whereas stock dividends do not affect par value per share. For example, if Greg's Games splits its common stock 2-for-1, the number of issued and outstanding shares is doubled and par value per share is cut in half. A stock split also decreases the market price per share of the stock. A 2-for-1 stock split of a $2 par stock with a $20 market value per share will result in two shares of $1 par value with approximately $10 market value per share.

> *A stock split, just like any other stock issuance, cannot involve issuing more shares of stock than authorized in the corporate charter.*

The market value of a share of Greg's Games' common stock has been approximately $50 per share. Assume that Greg's Games wishes to decrease the market price to approximately $25 per share. The company can make the market price drop to around $25 by effecting a 2-for-1 split of its common stock. A 2-for-1 stock split means that Greg's Games will have twice as many shares of stock issued and outstanding after the split as it did before, and each share's par value is cut in half. Assume Greg's Games has 3,150,000 shares issued and outstanding of $1 par common stock before the split. After the stock split, Greg's Games will have 6,300,000 shares (3,150,000 shares × 2) issued and outstanding of $0.50 par value as follows:

Common Stock Before Stock Split		Common Stock After Stock Split	
Common Stock—$1 Par Value; 3,150,000 shares issued and outstanding	$ 3,150,000	Common Stock—$0.50 Par Value; 6,300,000 shares issued and outstanding	$ 3,150,000

Memorandum Entry
An entry in the journal that notes a significant event, but has no debit or credit amount.

Because the stock split does not affect any account balances, no formal journal entry is needed. Instead, the split is recorded in a **memorandum entry**, an entry in the journal that notes a significant event but has no debit or credit amount.

Cash Dividends, Stock Dividends, and Stock Splits Compared

Cash dividends, stock dividends, and stock splits have some similarities and some differences. Exhibit 13-9 summarizes their effects on the accounting equation.

Exhibit 13-9 | **Effects of Dividends and Stock Splits on the Accounting Equation**

Effect On	Cash Dividend	Small Stock Dividend	Large Stock Dividend	Stock Split
Total Assets	Decrease	No effect	No effect	No effect
Total Liabilities	No effect	No effect	No effect	No effect
Common Stock	No effect	Increase	Increase	No effect
Paid-In Capital in Excess of Par	No effect	Increase	No effect	No effect
Retained Earnings	Decrease	Decrease	Decrease	No effect
Total Stockholders' Equity	Decrease	No effect	No effect	No effect

Try It!

8. On August 1, Hagino Corporation declared a $1.50 per share cash dividend on its common stock (20,000 shares) for stockholders on record as of August 15. Hagino paid the dividend on August 31. Journalize the entries declaring the cash dividend and paying the dividend.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S13-7 through S13-11. MyAccountingLab

HOW IS EQUITY REPORTED FOR A CORPORATION?

Learning Objective 5
Explain how equity is reported for a corporation

Earlier, you learned that a corporation's equity contains two basic sources: paid-in capital and retained earnings. Let's explore how stockholders' equity is reported.

Statement of Retained Earnings

The statement of retained earnings reports how the company's retained earnings balance changed from the beginning of the period to the end of the period. Remember that retained earnings is the equity earned by profitable operations that is not distributed to stockholders. Exhibit 13-10 shows the statement of retained earnings of Smart Touch Learning for 2016.

Exhibit 13-10 | **Statement of Retained Earnings**

SMART TOUCH LEARNING, INC.
Statement of Retained Earnings
Year Ended December 31, 2016

Retained Earnings, January 1, 2016	$ 0
Net income for the year	8,550
	8,550
Dividends declared	(3,000)
Retained Earnings, December 31, 2016	**$ 5,550**

Companies can report a negative amount in retained earnings. This is called a **deficit** and is reflected by a debit balance in the Retained Earnings account. A deficit occurs when a company has recurring losses and/or declares dividends in excess of retained earnings. Most states prohibit corporations from paying a dividend if a deficit will occur.

Deficit
Debit balance in the Retained Earnings account.

Appropriations of Retained Earnings

Cash dividends and treasury stock purchases require a cash payment. These cash outlays leave fewer resources to pay liabilities. For example, a bank may agree to loan $500,000 to a company only if the company maintains a minimum level of stockholders' equity by limiting both its declaration of dividends and its purchases of treasury stock. The restriction often focuses on the balance of retained earnings. Companies usually report their retained earnings restrictions in notes to the financial statements.

Appropriations of retained earnings are retained earnings restrictions recorded by journal entries. A corporation may *appropriate*—that is, segregate in a separate account—a

Appropriation of Retained Earnings
Restriction of a portion of retained earnings that is recorded by a journal entry.

portion of retained earnings for a specific use. For example, the board of directors may appropriate part of retained earnings for expansion or contingencies (such as a potential liability associated with a lawsuit).

Prior-Period Adjustments

Occasionally a company may make an accounting error as a result of mathematical mistakes, misapplying accounting principles, or oversight that is not discovered until the following period. Once discovered, these errors must be corrected because the Retained Earnings account balance is wrong. The error is corrected by adjusting the beginning balance in the Retained Earnings account in the period the error is discovered. Corrections to Retained Earnings for errors of an earlier period are called **prior-period adjustments**. The prior-period adjustment either increases or decreases the beginning balance of the Retained Earnings account and appears on the statement of retained earnings.

Prior-Period Adjustment
A correction to Retained Earnings for an error of an earlier period.

To illustrate, assume a fictitious company, Mountain Home, Inc. recorded $30,000 of salaries expense for 2016. The correct amount of salaries expense was $40,000. This error had the following effect:

- Understated Salaries Expense by $10,000
- Overstated net income by $10,000

In 2017, Mountain Home paid the extra $10,000 in salaries owed for the prior year. Mountain Home's prior-period adjustment decreased Retained Earnings as shown in Exhibit 13-11.

Exhibit 13-11 | **Statement of Retained Earnings—Prior Period Adjustment**

MOUNTAIN HOME, INC.
Statement of Retained Earnings
Year Ended December 31, 2017

Retained Earnings, January 1, 2017, as originally reported	$ 140,000
Prior period adjustment	(10,000)
Retained Earnings, January 1, 2017, as adjusted	130,000
Net income for the year	63,000
	193,000
Dividends declared	(23,000)
Retained Earnings, December 31, 2017	**$ 170,000**

Statement of Stockholders' Equity

IFRS requires a Statement of Stockholders' Equity, reporting the changes in all of the equity accounts.

The statement of stockholders' equity is another option for reporting the changes in stockholders' equity of a corporation. This statement has more information than the statement of retained earnings in that it reports the changes in all stockholders' equity accounts, not just Retained Earnings. The statement of stockholders' equity shows the beginning balance, any additions or subtractions, and the ending balance for all equity accounts. In addition, the statement of stockholders' equity also reports on the number of shares and any changes during the year in preferred, common, and treasury stock. Exhibit 13-12 shows a statement of stockholders' equity for Mountain Home, Inc.

Exhibit 13-12 | **Statement of Stockholders' Equity**

MOUNTAIN HOME, INC.
Statement of Stockholders' Equity
Year Ended December 31, 2017

	Common Stock		Paid-In Capital in Excess of Par	Retained Earnings	Total Stockholders' Equity
	Shares	Amount			
Balances, January 1, 2017, as originally reported	20,000	$ 20,000	$ 80,000	$ 140,000	$ 240,000
Prior period adjustment				(10,000)	(10,000)
Balances, January 1, 2017, as adjusted	20,000	$ 20,000	$ 80,000	$ 130,000	$ 230,000
Net income for the year				63,000	63,000
Dividends declared				(23,000)	(23,000)
Balances, December 31, 2017	**20,000**	**$ 20,000**	**$ 80,000**	**$ 170,000**	**$ 270,000**

Try It!

9. Sjostrom, Inc. had beginning retained earnings of $300,000 on January 1, 2016. During the year, Sjostrom declared and paid $140,000 of cash dividends and earned $200,000 of net income. Prepare a statement of retained earnings for Sjostrom, Inc. for the year ending December 31, 2016.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S13-12 and S13-13. MyAccountingLab

HOW DO WE USE STOCKHOLDERS' EQUITY RATIOS TO EVALUATE BUSINESS PERFORMANCE?

Investors are constantly comparing companies' profits. To compare companies of different sizes, we need some standard profitability measures. Three important ratios to use for comparison are earnings per share, rate of return on common stock, and price/earnings ratio.

Learning Objective 6
Use earnings per share, rate of return on common stock, and the price/earnings ratio to evaluate business performance

Earnings per Share

The final segment of a corporate income statement reports the company's earnings per share, abbreviated as EPS. EPS is the most widely used of all business statistics. **Earnings per share (EPS)** reports the amount of net income (loss) for each share of the company's *outstanding common stock*. Earnings per share is calculated as net income minus preferred dividends divided by the weighted average number of common shares outstanding. Preferred dividends are subtracted from net income because the preferred stockholders have the first claim to dividends. Therefore, that portion of the company's earnings is not available to the common stockholders and is not included in the EPS calculation on common stock. The computation for the weighted average number of common shares outstanding is covered in advanced accounting courses. For simplicity, we will determine earnings per share on the average number of shares outstanding (beginning balance plus ending balance, divided by two).

Earnings per Share (EPS)
Amount of a company's net income (loss) for each share of its outstanding common stock. (Net income − Preferred dividends) / Weighted average number of common shares outstanding.

For example, the **Green Mountain Coffee Roasters, Inc.** Fiscal 2013 Annual Report reports the following amounts:

	September 28, 2013	September 29, 2012
Net Income (for the year ended)	$ 483,232,000	$ 362,628,000
Preferred Dividends	0	0
Total Stockholders' Equity	2,635,570,000	2,261,228,000
Stockholders' Equity attributable to Preferred Stock	0	0
Number of Common Shares Outstanding	150,265,809 shares	152,680,855 shares

Green Mountain Coffee Roasters, Inc. earnings per share for 2013 is computed as follows:

Earnings per share = (Net income − Preferred dividends) / Average number of common shares outstanding
= ($483,232,000 − $0) / [(150,265,809 shares + 152,680,855 shares) / 2]
= $3.19 / share

FASB requires that earnings per share be reported on the income statement.

Price/Earnings Ratio

Price/Earnings Ratio
The ratio of the market price of a share of common stock to the company's earnings per share. Measures the value that the stock market places on $1 of a company's earnings. Market price per share of common stock / Earnings per share.

The **price/earnings ratio** is the ratio of the market price of a share of common stock to the company's earnings per share. The price/earnings ratio shows the market price of $1 of earnings. Assuming Green Mountain Coffee Roasters, Inc. has a market price of $75.00 per share of common stock, Green Mountain's price/earnings ratio is calculated as follows:

Price/earnings ratio = Market price per share of common stock / Earnings per share
= $75.00 per share / $3.19 per share
= 23.5

The price/earnings ratio implies that Green Mountain's stock is selling at 23.5 times one year's earnings per share. This ratio is commonly used by investors to evaluate their ability to earn a return on their investment. It tells investors how much they should be willing to pay for $1 of a company's earnings. A higher price/earnings ratio signifies a higher return on investment. As with other ratios, the price/earnings ratio is most useful when comparing one company to another.

Rate of Return on Common Stock

Rate of Return on Common Stockholders' Equity
Shows the relationship between net income available to common stockholders and their average common equity invested in the company. (Net income – Preferred dividends) / Average common stockholders' equity.

Rate of return on common stockholders' equity, often shortened to *return on equity*, shows the relationship between net income available to common stockholders and their average common equity invested in the company. The numerator is net income minus preferred dividends. Preferred dividends are subtracted because the preferred stockholders have first claim to any dividends. The denominator is average common stockholders' equity—total equity minus preferred equity.

Returning to Green Mountain Coffee Roasters, Inc., the rate of return on common stockholders' equity is calculated as follows:

Rate of return on common stockholders' equity = (Net income − Preferred dividends) / Average common stockholders' equity

= ($483,232,000 − $0) / [($2,635,570,000 + $2,261,228,000) / 2]

= 0.20 = 20%

Green Mountain has returned $0.20 for each $1 of the average amount invested by common stockholders. A rate of return on common stockholders' equity of 15% to 20% is considered good in most industries. At 20%, Green Mountain has an excellent return on equity.

Try It!

Vollmer, Inc. had reported the following balances:

	December 31, 2017	December 31, 2016
Net Income	$ 80,000	$ 60,000
Preferred Dividends	2,000	5,000
Total Stockholders' Equity	340,000	310,000
Stockholders' Equity attributable to Preferred Stock	20,000	20,000
Number of Common Shares Outstanding	10,000	14,000

10. Compute Vollmer's earnings per share for 2017.
11. Compute Vollmer's price/earnings ratio for 2017, assuming the market price is $40 per share.
12. Compute Vollmer's rate of return on common stockholders' equity for 2017.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S13-14 through S13-16. MyAccountingLab

REVIEW

> Things You Should Know

1. What is a corporation?

- A business organized under state law that is a separate legal entity.
- Corporations have capital stock that represents shares of ownership.
    - Authorized stock is the maximum number of shares of stock that the corporate charter allows the corporation to issue.
    - Outstanding stock is stock that has been issued and is in the hands of stockholders.
- Corporations can have different classes of stock:
    - Common stock represents the basic ownership of a corporation.
    - Preferred stock gives its owners certain advantages, such as the right to receive preferential dividends.
- A corporation's equity is called stockholders' equity. Stockholders' equity consists of two basic sources:
    - Paid-in capital—amounts received from stockholders in exchange for stock.
    - Retained earnings—equity earned by profitable operations that is not distributed to stockholders.

2. How is the issuance of stock accounted for?

- Issuance of common stock (and preferred stock) at par value

Date	Accounts and Explanation	Debit	Credit
	Cash	Par Value	
	Common Stock—$1 Par Value		Par Value
	Issued common stock at par.		

- Issuance of common stock (and preferred stock) at a premium

Date	Accounts and Explanation	Debit	Credit
	Cash	Issuance Price	
	Common Stock—$1 Par Value		Par Value
	Paid-In Capital in Excess of Par—Common		Difference
	Issued common stock at a premium.		

- Issuing stated value stock is almost identical to accounting for par value stock. The only difference is the use of the Paid-In Capital in Excess of *Stated* account.
- Stock can be issued for assets other than cash. The transaction should be recorded at the market value of the stock issued or the market value of the assets received, whichever is more clearly determinable.

3. How is treasury stock accounted for?

- Treasury stock is a corporation's own stock that it has previously issued and later reacquired.
- When treasury stock is purchased, it is recorded at cost, not par value.

Date	Accounts and Explanation	Debit	Credit
	Treasury Stock—Common	Cost	
	Cash		Cost
	Purchased treasury stock.		

- Treasury Stock is a contra equity account, has a normal debit balance, and is a reduction to total stockholders' equity.
- Treasury stock can be sold at cost, below cost, or above cost.
- As an alternative to treasury stock, corporations can retire stock, which removes the stock from the company's books.

4. How are dividends and stock splits accounted for?

- Cash dividends cause a decrease in both assets (Cash) and equity (Retained Earnings).
- Preferred stockholders receive a dividend preference that ensures that the preferred stockholders will receive dividends first. There are two categories of preferred stock:
  - Cumulative preferred stock—owners must receive all dividends in arrears (passed dividends) and current year dividends before the corporation pays dividends to the common stockholders.
  - Noncumulative preferred stock—owners do not receive any passed dividends.
- Stock dividends are distributions of a corporation's stock and have no effect on total stockholders' equity, assets, or liabilities.
  - Small stock dividends (less than 20% to 25%) are recorded at the stock's market value.
  - Large stock dividends (greater than 20% to 25%) are recorded at the stock's par value.
- Stock splits increase the number of issued and outstanding shares of stock coupled with a proportionate reduction in the par value of the stock.
- Stock splits do not affect any account balances, and no journal entry is needed.

5. How is equity reported for a corporation?

- The statement of retained earnings reports how the company's retained earnings balance changed from the beginning of the period to the end of the period.
- Retained earnings can be appropriated (set aside) for a specific use.
- Prior-period adjustments must be made to beginning retained earnings for mathematical mistakes, misapplied accounting principles, or oversight.
- The statement of stockholders' equity reports the changes in all stockholders' equity accounts.

6. How do we use stockholders' equity ratios to evaluate business performance?

- Earnings per share calculates the amount of a company's net income (loss) for each share of its outstanding common stock. (Net income − Preferred dividends) / Weighted average number of common shares outstanding.

- The price/earnings ratio measures the value that the stock market places on $1 of a company's earnings. Market price per share of common stock / Earnings per share.
- Rate of return on common stockholders' equity shows the relationship between net income available to common stockholders and their average common equity invested in the company. (Net income − Preferred dividends) / Average common stockholders' equity.

> Summary Problem 13-1

Delphian Corporation's balance sheet as of December 31, 2016, follows:

DELPHIAN CORPORATION
Balance Sheet (Partial)
December 31, 2016

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$1 Par Value; 11,000,000 shares authorized, 8,000,000 shares issued and outstanding	$ 8,000,000
Paid-In Capital in Excess of Par—Common	200,000
Total Paid-In Capital	8,200,000
Retained Earnings	800,000,000
Total Stockholders' Equity	**$ 808,200,000**

During 2017, Delphian Corporation had the following transactions:

Jan. 1	Issued 10,000 shares of common stock for $10 per share.
Feb. 15	Issued 2,000 shares of common stock for $8 per share.
Mar. 1	Declared a $0.20 per share cash dividend on its common stock to be paid on March 30. Date of record: March 15.
30	Paid the cash dividend to stockholders.
Nov. 1	Declared a 1% common stock dividend on all common stock outstanding. Current market price of the stock was $8. Date of record: Nov. 15.
30	Distributed stock to stockholders.
Dec. 1	Purchased 5,000 shares of treasury stock—common at $12 per share.
20	Sold 3,000 shares of treasury stock—common at $14 per share.

Requirements

1. Journalize Delphian's transactions for 2017.
2. Prepare the stockholders' equity section of the balance sheet as of December 31, 2017. Assume Delphian had net income of $20,000,000 during 2017 and that Cash Dividends and Stock Dividends have been closed to the Retained Earnings account.
3. Determine Delphian's earnings per share for 2017.
4. Assuming Delphian's market value per common share as of December 31, 2017, was $15, calculate Delphian's price/earnings ratio for 2017.

> Solution

1.

Date	Accounts and Explanation	Debit	Credit
Jan. 1	Cash ($10 per share × 10,000 shares)	100,000	
	Common Stock—$1 Par Value ($1 per share × 10,000 shares)		10,000
	Paid-In Capital in Excess of Par—Common ($9 per share × 10,000 shares)		90,000
	Issued common stock at a premium.		
Feb. 15	Cash ($8 per share × 2,000 shares)	16,000	
	Common Stock—$1 Par Value ($1 per share × 2,000 shares)		2,000
	Paid-In Capital in Excess of Par—Common ($7 per share × 2,000 shares)		14,000
	Issued common stock at a premium.		
Mar. 1	Cash Dividends ($0.20 per share × (8,000,000 shares + 10,000 shares + 2,000 shares))	1,602,400	
	Dividends Payable—Common		1,602,400
	Declared a cash dividend.		
15	*No entry recorded.*		
30	Dividends Payable—Common	1,602,400	
	Cash		1,602,400
	Payment of cash dividend.		
Nov. 1	Stock Dividends ($8 per share × 8,012,000 shares × 0.01)	640,960	
	Common Stock Dividend Distributable ($1 per share × 8,012,000 shares × 0.01)		80,120
	Paid-In Capital in Excess of Par—Common ($640,960 − $80,120)		560,840
	Declared a 1% stock dividend.		
15	*No entry recorded.*		
30	Common Stock Dividend Distributable	80,120	
	Common Stock—$1 Par Value		80,120
	Issued 1% stock dividend.		
Dec. 1	Treasury Stock—Common ($12 per share × 5,000 shares)	60,000	
	Cash		60,000
	Purchased treasury stock.		
20	Cash ($14 per share × 3,000 shares)	42,000	
	Treasury Stock—Common ($12 per share × 3,000 shares)		36,000
	Paid-In Capital from Treasury Stock Transactions ($2 per share × 3,000 shares)		6,000
	Sold treasury stock above cost.		

2.

DELPHIAN CORPORATION
Balance Sheet (Partial)
December 31, 2017

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$1 Par Value; 11,000,000 shares authorized, 8,092,120 shares issued, 8,090,120 outstanding	$ 8,092,120
Paid-In Capital in Excess of Par—Common	864,840
Paid-In Capital in from Treasury Stock Transactions	6,000
Total Paid-In Capital	8,962,960
Retained Earnings	817,756,640
Treasury Stock at Cost	(24,000)
Total Stockholders' Equity	**$ 826,695,600**

Calculations:

Common stock—number of shares issued and outstanding:

Beginning balance, Jan. 1	8,000,000 shares
Stock issuance on Jan. 1	10,000
Stock issuance on Feb. 15	2,000
Shares outstanding before dividend	8,012,000
Stock dividend on Nov. 30 (8,012,000 × 0.01)	80,120
Common stock issued	8,092,120 shares
Purchase of treasury stock on Dec. 1	(5,000)
Sale of treasury stock on Dec. 20	3,000
Common stock outstanding	8,090,120 shares

Paid-In Capital in Excess of Par:

Beginning balance, Jan. 1	$ 200,000
Stock issuance on Jan. 1	90,000
Stock issuance on Feb. 15	14,000
Stock dividend on Nov. 1	560,840
Total Paid-In Capital in Excess of Par	$ 864,840

Retained Earnings:

Beginning balance, Jan. 1	$ 800,000,000
Cash dividend on Mar. 1	(1,602,400)
Stock dividend on Nov. 1	(640,960)
Net income for the year	20,000,000
Ending balance, Dec. 31	$ 817,756,640

3. Earnings per share = (Net income − Preferred dividends) / Average number of common shares outstanding = ($20,000,000 − $0) / [(8,000,000 shares + 8,090,120 shares) / 2] = $2.49 per share
4. Price/earnings ratio = Market price per share of common stock / Earnings per share = $15 per share / $2.49 per share = 6.02

> Key Terms

Appropriation of Retained Earnings (p. 691)
Authorized Stock (p. 671)
Capital Stock (p. 671)
Common Stock (p. 672)
Corporation (p. 670)
Cumulative Preferred Stock (p. 685)
Deficit (p. 691)
Dividend (p. 672)
Dividend in Arrears (p. 685)
Earnings per Share (EPS) (p. 693)
Issue Price (p. 674)
Issued Stock (p. 671)
Large Stock Dividend (p. 687)
Legal Capital (p. 683)
Memorandum Entry (p. 690)
No-Par Stock (p. 673)
Noncumulative Preferred Stock (p. 685)
Outstanding Stock (p. 672)
Paid-In Capital (p. 673)
Paid-In Capital in Excess of Par (p. 675)
Par Value (p. 673)
Preemptive Right (p. 672)
Preferred Stock (p. 673)
Premium (p. 674)
Price/Earnings Ratio (p. 694)
Prior-Period Adjustment (p. 692)
Rate of Return on Common Stockholders' Equity (p. 694)
Retained Earnings (p. 673)
Small Stock Dividend (p. 687)
Stated Value Stock (p. 673)
Stock Certificate (p. 671)
Stock Dividend (p. 686)
Stock Split (p. 690)
Stockholders' Equity (p. 673)
Treasury Stock (p. 679)
Underwriter (p. 674)

> Quick Check

Learning Objective 1

1. Which characteristic of a corporation is a disadvantage?
   a. Mutual agency
   b. Double taxation
   c. Limited liability
   d. None are disadvantages.

Learning Objective 1

2. The two basic sources of stockholders' equity are
   a. assets and equity.
   b. preferred and common.
   c. retained earnings and dividends.
   d. paid-in capital and retained earnings.

Learning Objective 2

3. Suppose Value Home and Garden Imports issued 400,000 shares of $0.10 par common stock at $4 per share. Which journal entry correctly records the issuance of this stock?

Date	Accounts and Explanation	Debit	Credit
a.	Common Stock—$0.10 Par Value	1,600,000	
	Cash		40,000
	Paid-In Capital in Excess of Par—Common		1,560,000
b.	Common Stock—$0.10 Par Value	1,600,000	
	Cash		1,600,000
c.	Cash	1,600,000	
	Common Stock—$0.10 Par Value		40,000
	Paid-In Capital in Excess of Par—Common		1,560,000
d.	Cash	1,600,000	
	Common Stock—$0.10 Par Value		1,600,000

Learning Objective 2

4. Suppose Yummy Treats Bakery issues common stock in exchange for a building. Yummy Treats Bakery should record the building at
   - **a.** the par value of the stock given.
   - **b.** its book value.
   - **c.** its market value.
   - **d.** a value assigned by the board of directors.

Learning Objective 3

5. A company's own stock that it has issued and repurchased is called
   - **a.** outstanding stock.
   - **b.** dividend stock.
   - **c.** issued stock.
   - **d.** treasury stock.

Learning Objective 3

6. Assume that a company paid $6 per share to purchase 1,100 shares of its $3 par common stock as treasury stock. The purchase of treasury stock
   - **a.** increased total equity by $3,300.
   - **b.** decreased total equity by $3,300.
   - **c.** decreased total equity by $6,600.
   - **d.** increased total equity by $6,600.

Learning Objective 4

7. Winston Corporation has 9,000 shares of 4%, $10 par cumulative preferred stock and 47,000 shares of common stock outstanding. Winston declared no dividends in 2015 and had no dividends in arrears prior to 2015. In 2016, Winston declares a total dividend of $54,000. How much of the dividends go to the common stockholders?
   - **a.** $54,000
   - **b.** $50,400
   - **c.** $46,800
   - **d.** None; it all goes to preferred stockholders.

Learning Objective 4

8. A small stock dividend
   - **a.** decreases common stock.
   - **b.** has no effect on total equity.
   - **c.** increases Retained Earnings.
   - **d.** Items a, b, and c are correct.

Learning Objective 5

9. Jackson Health Foods has 8,000 shares of $2 par common stock outstanding, which were issued at $15 per share. Jackson also has a deficit balance in Retained Earnings of $86,000. How much is Jackson's total stockholders' equity?
   - **a.** $16,000
   - **b.** $120,000
   - **c.** $206,000
   - **d.** $34,000

Learning Objective 6

10. Dale Corporation has the following data:

Net income	$ 24,000
Preferred dividends	12,000
Average common stockholders' equity	100,000

Dale's rate of return on common stockholders' equity is
   - **a.** 24%
   - **b.** 50%
   - **c.** 12%
   - **d.** 36%

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is a corporation?
2. List three characteristics of a corporation.
3. How does authorized stock differ from outstanding stock?
4. What are the four basic rights of stockholders?
5. How does preferred stock differ from common stock?
6. What is par value?
7. What are the two basic sources of stockholders' equity? Describe each source.
8. What account is used to record the premium when issuing common stock? What type of account is this?
9. If stock is issued for assets other than cash, describe the recording of this transaction.
10. What is treasury stock? What type of account is Treasury Stock, and what is the account's normal balance?
11. Where and how is treasury stock reported on the balance sheet?
12. What is the effect on the accounting equation when cash dividends are declared? What is the effect on the accounting equation when cash dividends are paid?
13. What are the three relevant dates involving cash dividends? Describe each.
14. How does cumulative preferred stock differ from noncumulative preferred stock?
15. What is a stock dividend?
16. What is the effect on the accounting equation when a stock dividend is declared? What is the effect on the accounting equation when a stock dividend is distributed?
17. What are some reasons corporations issue stock dividends?
18. What is a stock split?
19. What does the statement of retained earnings report?
20. What is a prior-period adjustment?
21. What does the statement of stockholders' equity report? How does the statement of stockholders' equity differ from the statement of retained earnings?
22. What does earnings per share report, and how is it calculated?
23. What is the price/earnings ratio, and how is it calculated?
24. What does the rate of return on common stock show, and how is it calculated?

> Short Exercises

S13-1 Describing corporation characteristics

Learning Objective 1

Due to recent beef recalls, Southwest Steakhouse is considering incorporating. Bob, the owner, wants to protect his personal assets in the event the restaurant is sued.

Requirements

1. Which advantage of incorporating is most applicable? What are other advantages of organizing as a corporate entity?
2. What are some disadvantages of organizing as a corporation?

Learning Objective 2

S13-2 Journalizing issuance of stock—at par and at a premium

Virginia Corporation has two classes of stock: common, $5 par value; and preferred, $5 par value.

Requirements

1. Journalize Virginia's issuance of 5,500 shares of common stock for $15 per share.
2. Journalize Virginia's issuance of 5,500 shares of preferred stock for a total of $27,500.

Learning Objective 2

S13-3 Journalizing issuance of stock—no-par

Delta Corporation issued 6,500 shares of no-par common stock for $2 per share on October 13. Record the stock issuance.

Learning Objective 2

S13-4 Journalizing issuance of stock—stated value

Fireman Corporation issued 9,500 shares of $4 stated value common stock for $17 per share on July 7. Record the stock issuance.

Learning Objective 2

S13-5 Journalizing issuance of stock for assets other than cash

Cedar Corporation issued 35,000 shares of $3 par value common stock in exchange for a building with a market value of $200,000. Record the stock issuance.

Learning Objective 3

S13-6 Accounting for the purchase and sale of treasury stock

Discount Center Furniture, Inc. completed the following treasury stock transactions in 2016:

Dec. 1	Purchased 1,600 shares of the company's $1 par value common stock as treasury stock cash of $8 per share.
15	Sold 400 shares of the treasury stock for cash of $11 per share.
20	Sold 800 shares of the treasury stock for cash of $4 per share. (Assume the balance in Capital from Treasury Stock Transactions on December 20 is $2,200.)

Requirements

1. Journalize these transactions. Explanations are not required.
2. How will Discount Center Furniture, Inc. report treasury stock on its balance sheet as of December 31, 2016?

Learning Objective 4

S13-7 Accounting for cash dividends

Frenchroast Company earned net income of $95,000 during the year ended December 31, 2016. On December 15, Frenchroast declared the annual cash dividend on its 2% preferred stock (par value, $128,000) and a $0.75 per share cash dividend on its common stock (65,000 shares). Frenchroast then paid the dividends on January 4, 2017.

Requirements

1. Journalize for Frenchroast the entry declaring the cash dividends on December 15, 2016.
2. Journalize for Frenchroast the entry paying the cash dividends on January 4, 2017.

S13-8 Dividing cash dividends between preferred and common stock

Learning Objective 4

Bronze Tint Trust has the following classes of stock:

Preferred Stock—7%, $10 Par Value; 5,500 shares authorized, 4,000 shares issued and outstanding

Common Stock—$0.15 Par Value; 2,000,000 shares authorized, 1,100,000 shares issued and outstanding

Requirements

1. Bronze Tint declares cash dividends of $30,000 for 2016. How much of the dividends goes to preferred stockholders? How much goes to common stockholders?
2. Assume the preferred stock is cumulative and Bronze Tint passed the preferred dividend in 2014 and 2015. In 2016, the company declares cash dividends of $45,000. How much of the dividend goes to preferred stockholders? How much goes to common stockholders?
3. Assume the preferred stock is noncumulative and Bronze Tint passed the preferred dividend in 2014 and 2015. In 2016, the company declares cash dividends of $45,000. How much of the dividend goes to preferred stockholders? How much goes to common stockholders?

S13-9 Journalizing a small stock dividend

Learning Objective 4

Lakeside Water Sports has 14,000 shares of $3 par value common stock outstanding. Lakeside distributes a 5% stock dividend when the market value of its stock is $22 per share.

Requirements

1. Journalize Lakeside's declaration of the stock dividend on September 15 and distribution on September 30.
2. What is the overall effect of the stock dividend on Lakeside's total assets?
3. What is the overall effect on total stockholders' equity?

S13-10 Journalizing a large stock dividend

Learning Objective 4

Matty, Inc. had 260,000 shares of $4 par value common stock issued and outstanding as of August 15, 2016. The company is authorized to issue 1,200,000 common shares. On August 15, 2016, Matty declared a 40% stock dividend when the market value for Matty's common stock was $7 per share. The stock was issued on Aug. 30.

Requirements

1. Journalize the declaration and distribution of the stock dividend.
2. How many shares of common stock are outstanding after the dividend?

Learning Objective 4

S13-11 Accounting for a stock split

Home Decorators Imports recently reported the following stockholders' equity:

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$1 Par Value; 530,000,000 shares authorized, 121,000,000 shares issued and outstanding	$ 121,000,000
Paid-In Capital in Excess of Par—Common	147,000,000
Total Paid-In Capital	268,000,000
Retained Earnings	642,000,000
Total Stockholders' Equity	**$ 910,000,000**

Suppose Home Decorators split its common stock 2-for-1 in order to decrease the market price per share of its stock. The company's stock was trading at $16 per share immediately before the split.

Requirements

1. Prepare the stockholders' equity section of the Home Decorators Imports balance sheet after the stock split.
2. Were the account balances changed or unchanged after the stock split?

Learning Objective 5

S13-12 Preparing a statement of retained earnings

Tinder, Inc. had beginning retained earnings of $90,000 on January 1, 2016. During the year, Tinder declared and paid $90,000 of cash dividends and earned $95,000 of net income. Prepare a statement of retained earnings for Tinder, Inc. for the year ending December 31, 2016.

Learning Objective 5

S13-13 Analyzing the effect of prior-period adjustments

Miller Corporation discovered in 2017 that it had incorrectly recorded in 2016 a cash payment of $80,000 for utilities expense. The correct amount of the utilities expense was $25,000.

Requirements

1. Determine the effect of the error on the accounting equation in 2016.
2. How should this error be reported in the 2017 financial statements?

Learning Objective 6

S13-14 Computing earnings per share

GAZ Corporation had net income for 2016 of $68,400. GAZ had 18,250 shares of common stock outstanding at the beginning of the year and 24,550 shares of common stock outstanding as of December 31, 2016. During the year, GAZ declared and paid preferred dividends of $10,620. Compute GAZ's earnings per share.

Note: Short Exercise S13-14 must be completed before attempting Short Exercise S13-15.

Learning Objective 6

S13-15 Computing price/earnings ratio

Refer to the RUT data in Short Exercise S13-14. Assume the market price of RUT's common stock is $18 per share. Compute RUT's price/earnings ratio.

S13-16 Computing rate of return on common stockholders' equity

Learning Objective 6

Bratie, Inc.'s 2016 balance sheet reported the following items-with 2015 figures given for comparison:

BRATIE, INC.
Balance Sheet
As of December 31, 2016, and December 31, 2015

	December 31, 2016	December 31, 2015
Total Assets	$ 39,600	$ 26,880
Total Liabilities	17,100	13,380
Total Stockholders' Equity (all common)	22,500	13,500
Total Liabilities and Stockholders' Equity	$ 39,600	$ 26,880

Net income for 2016 was $3,690. Compute Bratie's rate of return on common stockholders' equity for 2016.

> Exercises

E13-17 Identifying advantages and disadvantages of a corporation

Learning Objective 1

Following is a list of advantages and disadvantages of the corporate form of business. Identify each quality as either an advantage or a disadvantage.

a. Ownership and management are separated.
b. Entity has continuous life.
c. Transfer of ownership is easy.
d. Stockholders' liability is limited.
e. Exposure to double taxation is evident.
f. Entity can raise more money than a partnership or sole proprietorship.
g. Government regulation is expensive.

E13-18 Determining paid-in capital for a corporation

Learning Objective 2

Alexa Corporation recently organized. The company issued common stock to an inventor in exchange for a patent with a market value of $56,000. In addition, Alexa received cash for 7,000 shares of its $20 par preferred stock at par value and 9,500 shares of its no-par common stock at $25 per share. Without making journal entries, determine the total paid-in capital created by these transactions.

E13-19 Journaling issuance of stock

Learning Objective 2

Stan Systems completed the following stock issuance transactions:

May 19	Issued 1,800 shares of $1 par value common stock for cash of $10.00 per share.
Jun. 3	Isssued 500 shares of $2, no-par preferred stock for $25,000 cash.
11	Received equipment with a market value of $75,000 in exchange for 5,000 shares of the $1 par value common stock.

Requirements

1. Journalize the transactions. Explanations are not required.
2. How much paid-in capital did these transactions generate for Stan Systems?

Learning Objective 2

1. a. Cash $16,000

E13-20 Journalizing issuance of no-par stock

Yates Corp. issued 3,000 shares of no-par common stock for $6 per share.

Requirements

1. Record issuance of the stock if the stock:
   a. is true no-par stock.
   b. has stated value of $4 per share.
2. Which type of stock results in more total paid-in capital?

Learning Objective 2

2. Total Stockholders' Equity $88,250

E13-21 Journalizing issuance of stock and preparing the stockholders' equity section of the balance sheet

The charter for ASAP–TV, Inc. authorizes the company to issue 100,000 shares of $2, no-par preferred stock and 500,000 shares of common stock with $1 par value. During its start-up phase, ASAP completed the following transactions:

Sep. 6	Issued 525 shares of common stock to the promoters who organized the corporation, receiving cash of $15,750.
12	Issued 600 shares of preferred stock for cash of $25,000.
14	Issued 1,500 shares of common stock in exchange for land with a market value of $26,000.

Requirements

1. Record the transactions in the general journal.
2. Prepare the stockholders' equity section of the ASAP–TV balance sheet at September 30, 2016, assuming ASAP–TV, Inc. had net income of $32,000 for the month.

Learning Objective 2

March 23 Common Stock $210 CR

E13-22 Journalizing issuance of stock and preparing the stockholders' equity section of the balance sheet

The charter of Evergreen Corporation authorizes the issuance of 900 shares of preferred stock and 3,500 shares of common stock. During a two-month period, Evergreen completed these stock-issuance transactions:

Mar. 23	Issued 210 shares of $1 par value common stock for cash of $10 per share.
Apr. 12	Received inventory with a market value of $25,000 and equipment with a market value of $16,000 for 350 shares of the $1 par value common stock.
17	Issued 900 shares of 6%, $50 par value preferred stock for $50 per share.

Requirements

1. Record the transactions in the general journal.
2. Prepare the stockholders' equity section of the Evergreen balance sheet as of April 30, 2016, for the transactions given in this exercise. Retained Earnings has a balance of $73,000 at April 30, 2016.

Learning Objective 3

2. Total Stockholders' Equity $53,500

E13-23 Journalizing treasury stock transactions and reporting stockholders' equity

Mountain Amusements Corporation had the following stockholders' equity on November 30:

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$5 Par Value; 1,300 shares authorized, 250 shares issued and outstanding	$ 1,250
Paid-In Capital in Excess of Par—Common	3,750
Total Paid-In Capital	5,000
Retained Earnings	57,000
Total Stockholders' Equity	**$ 62,000**

On December 30, Mountain purchased 175 shares of treasury stock at $8 per share.

Requirements

1. Journalize the purchase of the treasury stock.
2. Prepare the stockholders' equity section of the balance sheet at December 31, 2016. Assume the balance in retained earnings is unchanged from November 30.
3. How many shares of common stock are outstanding after the purchase of treasury stock?

Learning Objectives 2, 3

Sept. 22 Treasury Stock $3,300 CR

E13-24 Journalizing issuance of stock and treasury stock transactions

Stock transactions for Roadhog Driving School, Inc. follow:

Mar. 4	Issued 28,000 shares of $1 par value common stock at $12 per share.
May 22	Purchased 1,500 shares of treasury stock-common at $15 per share.
Sep. 22	Sold 900 shares of treasury stock-common at $25 per share.
Oct. 14	Sold 600 shares of treasury stock-common at $5 per share.

Journalize the transactions.

Learning Objective 4

1. Preferred Dividend 2016 $7,680

E13-25 Computing dividends on preferred and common stock and journalizing

Sunrise Communications has the following stockholders' equity on December 31, 2016:

Stockholders' Equity	
Paid-In Capital:	
Preferred Stock—8%, $9 Par Value; 150,000 shares authorized, 26,000 shares issued and outstanding	$ 234,000
Common Stock—$2 Par Value; 575,000 shares authorized, 390,000 shares issued and outstanding	780,000
Paid-In Capital in Excess of Par—Common	780,000
Total Paid-In Capital	1,794,000
Retained Earnings	190,000
Total Stockholders' Equity	**$ 1,984,000**

Requirements

1. Assuming the preferred stock is cumulative, compute the amount of dividends to preferred stockholders and to common stockholders for 2016 and 2017 if total dividends are $15,720 in 2016 and $53,000 in 2017. Assume no changes in preferred stock and common stock in 2017.
2. Record the journal entries for 2016, assuming that Sunrise Communications declared the dividend on December 1 for stockholders of record on December 10. Sunrise Communications paid the dividend on December 20.

Learning Objective 4

2. July 1 Cash Dividends $155,000 DR

E13-26 Computing dividends on preferred and common stock and journalizing

The following elements of stockholders' equity are from the balance sheet of Sandy Marketing Corp. at December 31, 2015:

Stockholders' Equity	
Paid-In Capital:	
Preferred Stock—4%, $2 Par Value; 100,000 shares authorized, 65,000 shares issued and outstanding	$ 130,000
Common Stock—$0.10 Par Value; 11,000,000 shares authorized, 10,250,000 shares issued and outstanding	1,025,000

Sandy paid no preferred dividends in 2015.

Requirements

1. Compute the dividends to the preferred and common shareholders for 2016 if total dividends are $150,000 and assuming the preferred stock is noncumulative.
2. Record the journal entries for 2016 assuming that Sandy Marketing Corp. declared the dividends on July 1 for stockholders of record on July 15. Sandy paid the dividends on July 31.

Learning Objective 4

2. Total Stockholders' Equity $127,600

E13-27 Journalizing a stock dividend and reporting stockholders' equity

The stockholders' equity of Pondwood Occupational Therapy, Inc. on December 31, 2015, follows:

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$2 Par Value; 1,450 shares authorized, 580 shares issued and outstanding	$ 1,160
Paid-In Capital in Excess of Par—Common	2,320
Total Paid-In Capital	3,480
Retained Earnings	120,000
Total Stockholders' Equity	**$ 123,480**

On April 30, 2016, the market price of Pondwood's common stock was $12 per share and the company declared a 10% stock dividend. The stock was distributed on May 15.

Requirements

1. Journalize the declaration and distribution of the stock dividend.
2. Prepare the stockholders' equity section of the balance sheet as of May 31, 2015. Assume Retained Earnings are $120,000 on April 30, 2016, before the stock dividend, and the only change made to Retained Earnings before preparing the balance sheet was closing the Stock Dividends account.

E13-28 Journalizing cash and stock dividends

Learning Objective 4

1. Common Stock $15,200 CR

Martial Arts Schools, Inc. is authorized to issue 200,000 shares of $4 par common stock. The company issued 72,000 shares at $6 per share. When the market price of common stock was $8 per share, Martial Arts declared and distributed a 14% stock dividend. Later, Martial Arts declared and paid a $0.60 per share cash dividend.

Requirements

1. Journalize the declaration and the distribution of the stock dividend.
2. Journalize the declaration and payment of the cash dividend.

E13-29 Reporting stockholders' equity after a stock split

Learning Objective 4

Total Stockholders' Equity $4,120

King Golf Club Corp. had the following stockholders' equity at December 31, 2015:

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$1 Par Value; 650 shares authorized, 200 shares issued and outstanding	$ 200
Paid-In Capital in Excess of Par—Common	400
Total Paid-In Capital	600
Retained Earnings	2,100
Total Stockholders' Equity	**$ 2,700**

On June 30, 2016, King split its common stock 2-for-1. Prepare the stockholders' equity section of the balance sheet immediately after the split. Assume the balance in retained earnings is unchanged from December 31, 2015.

E13-30 Determining the effects of cash dividends, stock dividends, and stock splits

Learning Objective 4

Complete the following chart by inserting a check mark (√) for each statement that is true.

	Cash dividend	Stock dividend	Stock split
Decreases retained earnings			
Has no effect on a liability			
Increases paid-in capital by the same amount that it decreases retained earnings			
Decreases both total assets and total stockholders' equity			
Has no effect on total stockholders' equity			

Learning Objectives 3, 4

E13-31 Determining the effect of stock dividends, stock splits, and treasury stock transactions

Many types of transactions may affect stockholders' equity. Identify the effects of the following transactions on total stockholders' equity. Each transaction is independent.

a. A 10% stock dividend. Before the dividend, 560,000 shares of $1 par value common stock were outstanding; market value was $8 at the time of the dividend.

b. A 2-for-1 stock split. Prior to the split, 66,000 shares of $3 par value common stock were outstanding.

c. Purchase of 1,300 shares of $0.50 par treasury stock at $4 per share.

d. Sale of 200 shares of $0.50 par treasury stock for $10 per share. Cost of the treasury stock was $8 per share.

Learning Objective 5

Retained Earnings Dec. 31, 2016
$97,000

E13-32 Preparing a statement of retained earnings

Susan May Bakery, Inc. reported a prior-period adjustment in 2016. An accounting error caused net income of prior years to be overstated by $4,000. Retained Earnings at December 31, 2015, as previously reported, was $42,000. Net income for 2016 was $79,000, and dividends declared were $20,000. Prepare the company's statement of retained earnings for the year ended December 31, 2016.

Learning Objective 6

E13-33 Computing earnings per share and price/earnings ratio

Palace Corp. earned net income of $85,150 and paid the minimum dividend to preferred stockholders for 2016. Assume that there are no changes in common shares outstanding. Palace's books include the following figures:

Preferred Stock—3%, $50 Par Value; 2,000 shares authorized, 1,000 shares issued and outstanding	$ 40,000
Common Stock—$5 Par Value; 85,000 shares authorized, 49,000 shares issued, 47,800 shares outstanding	520,000
Paid-In Capital in Excess of Par—Common	490,000
Treasury Stock—Common; 1,200 shares at cost	(28,000)

Requirements

1. Compute Temple's EPS for the year.
2. Assume Palace's market price of a share of common stock is $14 per share. Compute Palace's price/earnings ratio.

E13-34 Computing rate of return on common stockholders' equity

Learning Objective 6

Lofty Exploration Company reported these figures for 2016 and 2015:

	2016	2015
Income Statement—partial:		
Net Income	$ 18,100,000	$ 18,800,000
Balance Sheet—partial:		
	Dec. 31, 2016	**Dec. 31, 2015**
Total Assets	$ 322,000,000	$ 315,000,000
Preferred Stock	2,000,000	2,600,000
Common Stock	181,000,000	173,000,000
Retained Earnings	6,000,000	5,100,000
Total Stockholders' Equity	$ 189,000,000	$ 177,500,000

Compute rate of return on common stockholders' equity for 2016 assuming no dividends were paid to preferred stockholders.

> Problems Group A

P13-35A Organizing a corporation and issuing stock

Learning Objectives 1, 2

Maury and Brian are opening a candy shop. There are no competing candy shops in the area. They must decide how to organize the business. They anticipate profits of $200,000 the first year, with the ability to sell franchises in the future. Although they have enough to start the business now as a partnership, cash flow will be an issue as they grow. They feel the corporate form of operation will be best for the long term. They seek your advice.

Requirements

1. What is the main advantage they gain by selecting a corporate form of business now?
2. Would you recommend they initially issue preferred or common stock? Why?
3. If they decide to issue $10 par common stock and anticipate an initial market price of $45 per share, how many shares will they need to issue to raise $2,025,000?

P13-36A Identifying sources of equity, stock issuance, and dividends

Learning Objectives 1, 2, 4

4. Common stock dividends $840,000

Treat Comfort Specialists, Inc. reported the following stockholders' equity on its balance sheet at June 30, 2016:

Stockholders' Equity	
Paid-In Capital:	
Preferred Stock—6%, ? Par Value; 725,000 shares authorized, 260,000 shares issued and outstanding	$ 1,300,000
Common Stock—$1 Par Value; 3,000,000 shares authorized, 1,300,000 shares issued and outstanding	1,300,000
Paid-In Capital in Excess of Par—Common	2,500,000
Total Paid-In Capital	5,100,000
Retained Earnings	12,100,000
Total Stockholders' Equity	**$ 17,200,000**

Requirements

1. Identify the different classes of stock that Treat has outstanding.
2. What is the par value per share of Treat's preferred stock?
3. Make two summary journal entries to record issuance of all the Treat stock for cash. Explanations are not required.
4. No preferred dividends are in arrears. Journalize the declaration of a $300,000 dividend at June 30, 2016, and the payment of the dividend on July 20, 2016. Use separate Dividends Payable accounts for preferred and common stock. An explanation is not required.

Learning Objectives 2, 4

2. Total Stockholders' Equity $323,000

P13-37A Journalizing stock issuance and cash dividends and preparing the stockholders' equity section of the balance sheet

B-Cell Wireless needed additional capital to expand, so the business incorporated. The charter from the state of Georgia authorizes B-Cell to issue 100,000 shares of 5%, $150 par value cumulative preferred stock and 130,000 shares of $1 par value common stock. During the first month, B-Cell completed the following transactions:

Oct. 2	Issued 19,000 shares of common stock for a building with a market value of $260,000.
6	Issued 950 shares of preferred stock for $170 per share.
9	Issued 16,000 shares of common stock for cash of $96,000.
10	Declared a $11,000 cash dividend for stockholders of record on Oct. 20. Use a separate Payable account for preferred and common stock.
25	Paid the cash dividend.

Requirements

1. Record the transactions in the general journal.
2. Prepare the stockholders' equity section of B-Cell's balance sheet at October 31, 2016. Assume B-Cell's net income for the month was $93,000.

Learning Objectives 3, 4

Nov. 8 Treasury Stock $6,300 CR

P13-38A Journalizing dividends and treasury stock transactions and preparing the stockholders' equity section of the balance sheet

Starborn Manufacturing Co. completed the following transactions during 2016:

Jan. 16	Declared a cash dividend on the 6%, $103 par noncumulative preferred stock (1,050 shares outstanding). Declared a $0.20 per share dividend on the 115,000 shares of $8 par value common stock outstanding. The date of record is January 31, and the payment date is February 15.
Feb. 15	Paid the cash dividends.
Jun. 10	Split common stock 2-for-1.
Jul. 30	Declared a 30% stock dividend on the common stock. The market value of the commor $12 per share.
Aug. 15	Distributed the stock dividend.
Oct. 26	Purchased 5,400 shares of treasury stock at $11 per share.
Nov. 8	Sold 2,700 shares of treasury stock for $13 per share.
30	Sold 1,600 shares of treasury stock for $7 per share.

Requirements

1. Record the transactions in Starborn's general journal.
2. Prepare the Starborn's stockholders' equity section of the balance sheet as of December 31, 2016. Assume that Starborn was authorized to issue 1,100 shares of preferred stock and 300,000 shares of common stock. Both preferred stock and common stock were issued at par. The ending balance of retained earnings as of December 31, 2016, is $1,090,000.

P13-39A Journalizing dividend and treasury stock transactions, preparing a statement of retained earnings, and preparing stockholders' equity

Learning Objectives 3, 4, 5

2. Retained Earnings Dec. 31, 2016 $152,240

The balance sheet of Collin Management Consulting, Inc. at December 31, 2015, reported the following stockholders' equity:

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$15 Par Value; 250,000 shares authorized, 30,000 shares issued and outstanding	$ 450,000
Paid-In Capital in Excess of Par—Common	370,000
Total Paid-In Capital	820,000
Retained Earnings	162,000
Total Stockholders' Equity	**$ 982,000**

During 2016, Collin completed the following selected transactions:

Feb. 6	Declared a 15% stock dividend on common stock. The market value of Collin's stock was $22 per share.
15	Distributed the stock dividend.
Jul. 29	Purchased 2,000 shares of treasury stock at $22 per share.
Nov. 27	Declared a $0.15 per share cash dividend on the common stock outstanding.

Requirements

1. Record the transactions in the general journal.
2. Prepare a retained earnings statement for the year ended December 31, 2016. Assume Collin's net income for the year was $83,000.
3. Prepare the stockholders' equity section of the balance sheet at December 31, 2016.

Learning Objective 6

P13-40A Computing earnings per share, price/earnings ratio, and rate of return on common stockholders' equity

Austin Company reported these figures for 2016 and 2015:

	2016	2015
Income Statement—partial:		
Net Income	$ 21,900	$ 19,000
Balance Sheet—partial:		
	Dec. 31, 2016	**Dec. 31, 2015**
Total Assets	$ 250,000	$ 265,000
Paid-In Capital:		
Preferred Stock—10%, $11 Par Value; 95,000 shares authorized, 9,000 shares issued and outstanding	$ 99,000	$ 99,000
Common Stock—$1 Par Value; 90,000 shares authorized, 60,000 shares issued and outstanding	60,000	60,000
Paid-In Capital in Excess of Par—Common	25,000	25,000
Retained Earnings	52,000	40,000
Total Stockholders' Equity	$ 236,000	$ 224,000

Requirements

1. Compute Austin Company's earnings per share for 2016. Assume the company paid the minimum preferred dividend during 2016.
2. Compute Austin Company's price/earnings ratio for 2016. Assume the company's market price per share of common stock is $5.
3. Compute Austin Company's rate of return on common stockholders' equity for 2016. Assume the company paid the minimum preferred dividend during 2016.

> Problems Group B

Learning Objectives 1, 2

P13-41B Organizing a corporation and issuing stock

Montel and Mike are opening a couture clothing boutique. There are no competing couture clothing boutiques in the area. They must decide how to organize the business. They anticipate profits of $500,000 the first year, with the ability to sell franchises in the future. Although they have enough to start the business now as a partnership, cash flow will be an issue as they grow. They feel the corporate form of operation will be best for the long term. They seek your advice.

Requirements

1. What is the main advantage they gain by selecting a corporate form of business now?
2. Would you recommend they initially issue preferred or common stock? Why?
3. If they decide to issue $10 par common stock and anticipate an initial market price of $20 per share, how many shares will they need to issue to raise $2,750,000?

P13-42B Identifying sources of equity, stock issuance, and dividends

Learning Objectives 1, 2, 4

4. Common stock dividends $112,000

Team Comfort Specialists, Inc. reported the following stockholders' equity on its balance sheet at June 30, 2016:

Stockholders' Equity	
Paid-In Capital:	
Preferred Stock—6%, ? Par Value; 700,000 shares authorized, 320,000 shares issued and outstanding	$ 1,600,000
Common Stock—$1 Par Value; 4,000,000 shares authorized, 1,330,000 shares issued and outstanding	1,330,000
Paid-In Capital in Excess of Par—Common	3,000,000
Total Paid-In Capital	5,930,000
Retained Earnings	11,800,000
Total Stockholders' Equity	**$ 17,730,000**

Requirements

1. Identify the different classes of stock that Team has outstanding.
2. What is the par value per share of Team's preferred stock?
3. Make two summary journal entries to record issuance of all the Team stock for cash. Explanations are not required.
4. No preferred dividends are in arrears. Journalize the declaration of a $700,000 dividend at June 30, 2016, and the payment of the dividend on July 20, 2016. Use separate Dividends Payable accounts for preferred and common stock. An explanation is not required.

P13-43B Journalizing stock issuance and cash dividends and preparing the stockholders' equity section of the balance sheet

Learning Objectives 2, 4

2. Total Stockholders' Equity $371,000

B-Cell Wireless needed additional capital to expand, so the business incorporated. The charter from the state of Georgia authorizes B-Cell to issue 40,000 shares of 9%, $50 par value cumulative preferred stock and 170,000 shares of $2 par value common stock. During the first month, B-Cell completed the following transactions:

Oct. 2	Issued 20,000 shares of common stock for a building with a market value of $140,000.
6	Issued 800 shares of preferred stock for $130 per share.
9	Issued 17,000 shares of common stock for cash of $85,000.
10	Declared a $18,000 cash dividend for stockholders of record on Oct. 20. Use a separate Payable account for preferred and common stock.
25	Paid the cash dividend.

Requirements

1. Record the transactions in the general journal.
2. Prepare the stockholders' equity section of B-Cell's balance sheet at October 31, 2016. Assume B-Cell's net income for the month was $92,000.

Learning Objectives 3, 4

1. Nov. 8 Treasury Stock $6,300 CR

P13-44B Journalizing dividends and treasury stock transactions and preparing the stockholders' equity section of the balance sheet

Dearborn Manufacturing Co. completed the following transactions during 2016:

Jan. 16	Declared a cash dividend on the 6%, $105 par noncumulative preferred stock (1,000 shares outstanding). Declared a $0.50 per share dividend on the 100,000 shares of $4 value common stock outstanding. The date of record is January 31, and the payment date is February 15.
Feb. 15	Paid the cash dividends.
Jun. 10	Split common stock 2-for-1.
Jul. 30	Declared a 30% stock dividend on the common stock. The market value of the common stock was $12 per share.
Aug. 15	Distributed the stock dividend.
Oct. 26	Purchased 1,000 shares of treasury stock at $8 per share.
Nov. 8	Sold 500 shares of treasury stock for $10 per share.
30	Sold 300 shares of treasury stock for $4 per share.

Requirements

1. Record the transactions in Dearborn's general journal.
2. Prepare the Dearborn's stockholders' equity section of the balance sheet as of December 31, 2016. Assume that Dearborn was authorized to issue 2,000 shares of preferred stock and 400,000 shares of common stock. Both preferred stock and common stock were issued at par. The ending balance of retained earnings as of December 31, 2016, is $1,060,000.

Learning Objectives 3, 4, 5

2. Retained Earnings Dec. 31, 2016 $218,740

P13-45B Journalizing dividend and treasury stock transactions, preparing a statement of retained earnings, and preparing stockholders' equity

The balance sheet of Millan Management Consulting, Inc. at December 31, 2015, reported the following stockholders' equity:

Stockholders' Equity	
Paid-In Capital:	
Common Stock—$10 Par Value; 150,000 shares authorized, 32,000 shares issued and outstanding	$ 320,000
Paid-In Capital in Excess of Par—Common	330,000
Total Paid-In Capital	650,000
Retained Earnings	164,000
Total Stockholders' Equity	**$ 814,000**

During 2016, Millan completed the following selected transactions:

Feb. 6	Declared a 10% stock dividend on common stock. The market value of Millan's stock per share.
15	Distributed the stock dividend.
Jul. 29	Purchased 2,000 shares of treasury stock at $30 per share.
Nov. 27	Declared a $0.20 per share cash dividend on the common stock outstanding.

Requirements

1. Record the transactions in the general journal.
2. Prepare a retained earnings statement for the year ended December 31, 2016. Assume Millan's net income for the year was $81,000.
3. Prepare the stockholders' equity section of the balance sheet at December 31, 2016.

Learning Objective 6

P13-46B Computing earnings per share, price/earnings ratio, and rate of return on common stockholders' equity

Castillo Company reported these figures for 2016 and 2015:

	2016	2015
Income Statement—partial:		
Net Income	$ 27,000	$ 17,000
Balance Sheet—partial:		
	Dec. 31, 2016	**Dec. 31, 2015**
Total Assets	$ 260,000	$ 240,000
Paid-In Capital:		
Preferred Stock—5%, $4 Par Value; 75,000 shares authorized, 10,000 shares issued and outstanding	$ 40,000	$ 40,000
Common Stock—$2 Par Value; 65,000 shares authorized, 50,000 shares issued and outstanding	100,000	100,000
Paid-In Capital in Excess of Par—Common	14,000	14,000
Retained Earnings	71,000	46,000
Total Stockholders' Equity	$ 225,000	$ 200,000

Requirements

1. Compute Castillo Company earnings per share for 2016. Assume the company paid the minimum preferred dividend during 2016.
2. Compute Castillo Company price/earnings ratio for 2016. Assume the company's market price per share of common stock is $7.
3. Compute Castillo Company rate of return on common stockholders' equity for 2016. Assume the company paid the minimum preferred dividend during 2016.

> Continuing Problem

P13-47 Sources of equity and journalizing stock issuance

This problem continues the Daniels Consulting situation from Problem P12-45 of Chapter 12. Daniels decides to raise additional capital for a planned business expansion by issuing 8,000 additional $2 par value common shares for $24,000 and by issuing 2,500, 4%, $50 par preferred shares at $55 per share. Assuming total stockholders' equity is $25,422 and includes 200 shares of common stock and 0 shares of preferred stock issued and outstanding immediately before the previously described transactions, journalize the entries related to the issuances of both common and preferred shares.

CRITICAL THINKING

> Decision Cases

Decision Case 13-1

Lena Kay and Kathy Lauder have a patent on a new line of cosmetics. They need additional capital to market the products, and they plan to incorporate the business. They are considering the capital structure for the corporation. Their primary goal is to raise as much capital as possible without giving up control of the business. Kay and Lauder plan to invest the patent (an intangible asset, which will be transferred to the company's ownership in lieu of cash) in the company and receive 100,000 shares of the corporation's common stock. They have been offered $100,000 for the patent, which provides an indication of the fair market value of the patent.

The corporation's plans for a charter include an authorization to issue 5,000 shares of preferred stock and 500,000 shares of $1 par common stock. Kay and Lauder are uncertain about the most desirable features for the preferred stock. Prior to incorporating, they are discussing their plans with two investment groups. The corporation can obtain capital from outside investors under either of the following plans:

- **Plan 1.** Group 1 will invest $150,000 to acquire 1,500 shares of 6%, $100 par nonvoting, noncumulative preferred stock.
- **Plan 2.** Group 2 will invest $100,000 to acquire 1,000 shares of $5, no-par preferred stock and $70,000 to acquire 70,000 shares of common stock. Each preferred share receives 50 votes on matters that come before the common stockholders.

Requirements

Assume that the corporation has been chartered (approved) by the state.

1. Journalize the issuance of common stock to Kay and Lauder. Explanations are not required.
2. Journalize the issuance of stock to the outsiders under both plans. Explanations are not required.
3. Net income for the first year is $180,000, and total dividends are $30,000. Prepare the stockholders' equity section of the corporation's balance sheet under both plans at the end of the first year.
4. Recommend one of the plans to Kay and Lauder. Give your reasons.

> Financial Statement Case 13-1

Use **Starbucks Corporation's** financial statements to answer the following questions. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's Fiscal 2013 Annual Report.

Requirements

1. Review the stockholders' equity section of the balance sheet. Did Starbucks have any preferred stock at September 29, 2013?
2. Now review Note 11: Shareholders' Equity. Is Starbucks authorized to issue preferred stock? If so, how much?
3. How much of Starbucks Corporation's common stock was outstanding at September 29, 2013? How can you tell?

4. Examine Starbucks Corporation's consolidated statements of cash flows. Did Starbucks pay any cash dividends during the year ending September 29, 2013? If so, how much?
5. Show how Starbucks Corporation computed basic earnings per share of $0.01 for 2013. (Ignore diluted earnings per share.)

> Team Project 13-1

Obtain the annual reports (or annual report data) of five well-known companies. You can get the reports either from the companies' Web sites, from your college library, or by mailing a request directly to the company (allow two weeks for delivery). Or you can go online and search the SEC EDGAR database (**http://www.sec.gov/edgar.shtml**), which includes the financial reports of most well-known companies.

Requirements

1. After selecting five companies, examine their income statements to search for the following items:
   a. Net income or net loss
   b. Earnings per share data
2. Study the companies' balance sheets to answer the following questions:
   a. What classes of stock has each company issued?
   b. Which item carries a larger balance—the Common Stock account or Paid-In Capital in Excess of Par (also labeled Additional Paid-In Capital)?
   c. What percentage of each company's total stockholders' equity is made up of retained earnings?
   d. Do any of the companies have treasury stock? If so, how many shares and how much is the cost?
3. Examine each company's statement of stockholders' equity for evidence of the following:
   a. Cash dividends
   b. Stock dividends
   c. Treasury stock purchases and sales
4. As directed by your instructor, either write a report or present your findings to your class. You may not be able to understand *everything* you find, but neither can the Wall Street analysts! You will be amazed at how much you have learned.

> Communication Activity 13-1

In 75 words or fewer, explain the difference between stock dividends and stock splits. Include the effect on stock values.

> Quick Check Answers

1. b **2.** d **3.** c **4.** c **5.** d **6.** c **7.** c **8.** b **9.** d **10.** c

14

The Statement of Cash Flows

Why Doesn't the Business Have Any Cash?

David National reviewed his company's income statement with a confused look on his face. The statement reported a net profit of $20,000 for the past quarter. David knew that sales had been increasing in his small sporting equipment retail shop, and he expected this trend to continue through the end of the year. But David didn't understand why the income statement showed a profit. The company's payroll clerk had called him earlier in the day and told him that there wasn't enough cash in the bank to pay the company's monthly salaries.

It didn't make sense to David that the company could report a $20,000 profit on the income statement but not have enough cash to pay the payroll. He figured that the newly hired accountant, Mark Maloney, must have made a mistake.

David picked up the phone to call Mark. He had several questions to ask him. Why didn't the company have any cash in the bank? How was the company using its cash? How could the company report a $20,000 profit but not have that much cash in the bank? Where did the cash received from customers go?

After speaking with his accountant, David learned that the profit reported on the income statement didn't represent cash and that it was important that he review the company's statement of cash flows. The statement of cash flows, Mark told him, reports the cash receipts and cash payments of the business. It shows the sources and uses of cash and helps answer the question "Where did the cash go?"

Why Is Cash So Important?

You can probably answer that question from your own experience. It takes cash to pay bills and to generate future income for a business. Businesses, such as Target Corporation, a retail corporation that sells everything from sporting equipment to food, closely monitor cash. Target is interested in where its cash came from (receipts) and how its cash is spent (payments). One way for Target to monitor its cash receipts and payments is by preparing a statement of cash flows. For example, on Target's 2013 statement of cash flows, the corporation reported that it paid $3.5 billion purchasing property and equipment and that it received $86 million cash receipts from disposing of property and equipment. It also reported that from 2012 to 2013 the corporation had a decrease in cash of $89 million, even though net income was $1.97 billion. In this chapter, you learn what a statement of cash flows is and why it is useful to a business. In addition, you learn how to prepare the statement and understand why companies and investors carefully monitor the statement of cash flows.

Chapter 14 Learning Objectives

1 Identify the purposes of the statement of cash flows and distinguish among operating, investing, and financing cash flows

2 Prepare the statement of cash flows by the indirect method

3 Use free cash flow to evaluate business performance

4 Prepare the statement of cash flows by the direct method (Appendix 14A)

5 Prepare the statement of cash flows by the indirect method using a spreadsheet (Appendix 14B)

WHAT IS THE STATEMENT OF CASH FLOWS?

Learning Objective 1
Identify the purposes of the statement of cash flows and distinguish among operating, investing, and financing cash flows

Up to this point, you have learned about three financial statements—the income statement, the statement of retained earnings, and the balance sheet. Each of these financial statements reports specific items about a company. The income statement reports net income or net loss for the time period. The statement of retained earnings reports the changes in retained earnings during the time period, and the balance sheet reports a company's financial position. None of these statements reports specifically on the changes in cash.

When a comparative balance sheet for two periods is presented, it shows whether cash increased or decreased. But the balance sheet does not show *why* cash increased or decreased. We need the statement of cash flows for that. The **statement of cash flows** reports on a business's cash receipts and cash payments for a specific period. This statement does the following:

- Reports on the **cash flows** of a business—where cash came from (receipts) and how cash was spent (payments).
- Reports why cash increased or decreased during the period.
- Covers a span of time and is dated the same as the income statement—"Year Ended December 31, 2016," for example.

Statement of Cash Flows
Reports on a business's cash receipts and cash payments for a specific period.

Cash Flows
Cash receipts and cash payments of a business.

Purpose of the Statement of Cash Flows

The statement of cash flows explains why net income as reported on the income statement does not equal the change in the cash balance. In essence, the statement of cash flows is the link between the accrual-based income statement and the cash reported on the balance sheet.

How do people use cash flow information? The statement of cash flows helps do the following:

- **Predict future cash flows.** Past cash receipts and payments help predict future cash flows.
- **Evaluate management.** Wise investment decisions help the business prosper, while unwise decisions cause the business to have problems. Investors and creditors use cash flow information to evaluate managers' decisions.
- **Predict ability to pay debts and dividends.** Lenders want to know whether they will collect on their loans. Stockholders want dividends on their investments. The statement of cash flows helps make these predictions.

Classification of Cash Flows

There are three basic types of cash flow activities, and the statement of cash flows has a section for each:

- Operating activities
- Investing activities
- Financing activities

Each section reports cash inflows (cash receipts coming into the company) and cash outflows (cash going out of the company) based on these three divisions.

Operating Activities

Operating Activities
Activities that create revenue or expense in the entity's business; a section of the statement of cash flows.

Operating activities is the first section on the statement of cash flows and is often the most important category. The **operating activities** section reports on activities that create revenue or expense in the entity's business. It reflects the day-to-day operations of the business such as cash receipts (cash inflows) from customers for the sales of merchandise inventory and services and the cash outflows for purchases of merchandise inventory or payment of operating expenses. The operating activities section also includes cash receipts (cash inflows) for interest and dividend income and cash payments (cash outflows) for interest expense and income tax expense.

Investing Activities

Investing Activities
Activities that increase or decrease long-term assets; a section of the statement of cash flows.

Investing activities is the second category listed on the statement of cash flows. This section reports cash receipts and cash payments that increase or decrease long-term assets such as property, plant, equipment, notes receivable, and investments. It includes the cash inflow from selling and the cash outflow for the purchase of these long-term assets. In addition, it includes the loaning (cash outflow) and collecting (cash inflow) of long-term notes receivable.

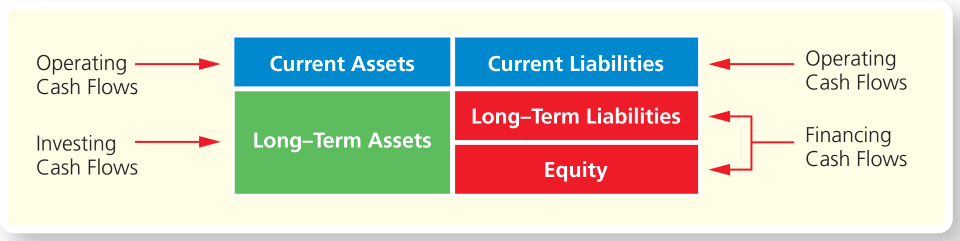
Financing Activities

Financing Activities
Activities that increase or decrease long-term liabilities and equity; a section of the statement of cash flows.

The last category on the statement of cash flows is **financing activities**. Financing activities include cash inflows and outflows involved in long-term liabilities and equity. This includes issuing stock, paying dividends, and buying and selling treasury stock. It also includes borrowing money and paying off long-term liabilities such as notes payable, bonds payable, and mortgages payable.

Each section of the statement of cash flows affects a different part of the balance sheet. The operating activities section reports on how cash flows affect the current accounts—current assets and current liabilities. Investing activities affect the long-term assets. And the financing activities affect long-term liabilities and equity. Exhibit 14-1 shows the relationship between operating, investing, and financing cash flows and the various parts of the balance sheet.

Exhibit 14-1 **Operating, Investing, and Financing Cash Flows and the Balance Sheet Accounts**



Non-cash Investing and Financing Activities

The three sections of the statement of cash flows report only activities that involve cash. Companies do make investments that do not require cash. They also obtain financing other than cash. Such transactions are called **non-cash investing and financing activities**. Examples of these activities include the purchase of equipment financed by a long-term note payable or the contribution of equipment by a stockholder in exchange for common stock. These activities are not included in the statement of cash flows. Instead, they appear either as a separate schedule at the bottom of the statement or in the notes to the financial statements.

Exhibit 14-2 summarizes the different sections on the statement of cash flows.

Non-cash Investing and Financing Activities
Investing and financing activities that do not involve cash.

IFRS

Under IFRS, interest and dividend income may be reported either as an operating activity or as an investing activity. Interest and dividends paid may be reported either as an operating activity or as a financing activity.

Exhibit 14-2 | **Sections of the Statement of Cash Flows**

Operating Activities	Cash Inflows: • From customers for the sales of merchandise inventory and services • For interest and dividend income Cash Outflows: • For the purchase of merchandise inventory and payment of operating expenses • For interest expense and income tax expense
Investing Activities	Cash Inflows: • From the sale of property, plant, equipment, and investments • From the collection of long-term notes receivable Cash Outflows: • To purchase property, plant, equipment, and investments • For loans made to borrowers
Financing Activities	Cash Inflows: • From issuance of stock and selling treasury stock • From receipt of borrowing money Cash Outflows: • For payment of dividends and buying treasury stock • For repayments of loans
Non-cash Investing and Financing Activities	A separate schedule that includes investing and financing activities that *do not* include cash

The statement of cash flows reports only activities that involve either the receipt of cash or the payment of cash. If a transaction does not involve cash, it will not be included in the operating, investing, or financing sections of the statement of cash flows.

Two Formats for Operating Activities

Indirect Method
A format of the operating activities section of the statement of cash flows; starts with net income and reconciles to net cash provided by operating activities.

Direct Method
A format of the operating activities section of the statement of cash flows; lists the operating cash receipts and cash payments.

IFRS

IFRS permits the use of either the direct or indirect method.

There are two ways to format the operating activities section of the statement of cash flows:

- The **indirect method** starts with net income and adjusts it to net cash provided by operating activities.
- The **direct method** restates the income statement in terms of cash. The direct method shows all the cash receipts and all the cash payments from operating activities.

The indirect and direct methods use different computations but produce the same amount of net cash flow from operating activities. Both methods present investing activities and financing activities in exactly the same format. Only the *operating activities* section is presented differently between the two methods.

We begin with the indirect method because most companies use it. To focus on the direct method, review Appendix 14A, located at the end of this chapter.

Try It!

Identify each item as operating (O), investing (I), financing (F), or non-cash (N).

1. Cash receipt from the sale of equipment
2. Cash payment for salaries
3. Cash receipt from the collection of long-term notes receivable
4. Purchase of equipment in exchange for notes payable
5. Cash receipt from the issuance of common stock

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S14-1 and S14-2. MyAccountingLab

HOW IS THE STATEMENT OF CASH FLOWS PREPARED USING THE INDIRECT METHOD?

Learning Objective 2
Prepare the statement of cash flows by the indirect method

To prepare the statement of cash flows, you need the income statement for the current year, as well as the balance sheets from the current and prior year. In addition, you need to review the transactions for some additional information. For illustrative purposes, we will use ShopMart, Inc., a fictitious retail store that sells electronics, home furnishings, home supplies, and more. ShopMart's comparative balance sheet is shown in Exhibit 14-3, and

Exhibit 14-3 | **Comparative Balance Sheet**

SHOPMART, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015	Increase (Decrease)
Assets			
Current Assets:			
Cash	$ 22,000	$ 42,000	$ (20,000)
Accounts Receivable	90,000	73,000	17,000
Merchandise Inventory	143,000	145,000	(2,000)
Long-term Assets:			
Plants Assets	507,000	252,000	255,000
Accumulated Depreciation—Plant Assets	(47,000)	(42,000)	(5,000)
Total Assets	**$ 715,000**	**$ 470,000**	**$ 245,000**
Liabilities			
Current Liabilities:			
Accounts Payable	$ 90,000	$ 50,000	$ 40,000
Accrued Liabilities	5,000	10,000	(5,000)
Long-term Liabilities:			
Notes Payable	160,000	80,000	80,000
Total Liabilities	255,000	140,000	115,000
Stockholders' Equity			
Common Stock, no par	370,000	250,000	120,000
Retained Earnings	110,000	80,000	30,000
Treasury Stock	(20,000)	0	(20,000)
Total Stockholders' Equity	460,000	330,000	130,000
Total Liabilities and Stockholders' Equity	**$ 715,000**	**$ 470,000**	**$ 245,000**

its income statement is shown in Exhibit 14-4 (on the next page). Additional information provided by ShopMart includes the following:

- Purchased $310,000 in plant assets by paying cash.
- Sold plant assets with a cost of $55,000 and accumulated depreciation of $15,000, yielding a gain of $10,000.
- Received $90,000 cash from issuance of notes payable.
- Paid $10,000 cash to retire notes payable.
- Received $120,000 cash from issuing shares of common stock.
- Paid $20,000 cash for purchase of shares of treasury stock.

Exhibit 14-4 | **Income Statement**

SHOPMART, INC.
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 286,000
Cost of Goods Sold		156,000
Gross Profit		130,000
Operating Expenses:		
Salaries and Wages Expense	$ 56,000	
Depreciation Expense—Plant Assets	20,000	
Other Operating Expense	16,000	
Total Operating Expenses		92,000
Operating Income		38,000
Other Revenue and (Expenses):		
Interest Revenue	12,000	
Dividend Revenue	9,000	
Gain on Disposal of Plant Assets	10,000	
Interest Expense	(15,000)	
Total Other Revenues and (Expenses)		16,000
Income Before Income Taxes		54,000
Income Tax Expense		14,000
Net Income		**$ 40,000**

To prepare the statement of cash flows by the indirect method, we follow Steps 1–5:

Step 1: Complete the cash flows from operating activities section using net income and adjusting for increases or decreases in current assets (other than cash) and current liabilities. Also adjust for gains or losses from long-term assets and non-cash expenses such as depreciation expense.

Step 2: Complete the cash flows from investing activities section by reviewing the long-term assets section of the balance sheet.

Step 3: Complete the cash flows from financing activities section by reviewing the long-term liabilities and equity sections of the balance sheet.

Step 4: Compute the net increase or decrease in cash during the year. The change in cash is the key reconciling figure for the statement of cash flows and must match the change in cash reported on the comparative balance sheet.

Step 5: Prepare a separate schedule reporting any non-cash investing and financing activities.

Let's apply these steps to show the operating activities of ShopMart. Exhibit 14-5 depicts the completed statement of cash flows.

Exhibit 14-5 **Statement of Cash Flows—Indirect Method**

SHOPMART, INC.
Statement of Cash Flows
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Net Income		$ 40,000
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:		
Depreciation Expense—Plant Assets	$ 20,000	
Gain on Disposal of Plant Assets	(10,000)	
Increase in Accounts Receivable	(17,000)	
Decrease in Merchandise Inventory	2,000	
Increase in Accounts Payable	40,000	
Decrease in Accrued Liabilities	(5,000)	30,000
Net Cash Provided by Operating Activities		70,000
Cash Flows from Investing Activities:		
Cash Payment for Acquisition of Plant Assets	(310,000)	
Cash Receipt from Disposal of Plant Assets	50,000	
Net Cash Used for Investing Activities		(260,000)
Cash Flows from Financing Activities:		
Cash Receipt from Issuance of Notes Payable	90,000	
Cash Payment of Notes Payable	(10,000)	
Cash Receipt from Issuance of Common Stock	120,000	
Cash Payment for Purchase of Treasury Stock	(20,000)	
Cash Payment of Dividends	(10,000)	
Net Cash Provided by Financing Activities		170,000
Net Increase (Decrease) in Cash		(20,000)
Cash Balance, December 31, 2015		42,000
Cash Balance, December 31, 2016		**$ 22,000**

Step 1: Operating Activities

Step 2: Investing Activities

Step 3: Financing Activities

Step 4: Net Increase (Decrease) in Cash

Cash Flows from Operating Activities

When using the indirect method, the statement of cash flows operating activities section begins with net income (or net loss) because revenues and expenses, which affect net income, produce cash receipts and cash payments. Revenues bring in cash receipts, and expenses must be paid. But net income as shown on the income statement is accrual-based, and the cash flows (cash basis net income) do not always equal the accrual basis revenues and expenses. For example, sales *on account* generate revenues that increase net income, but the company has not yet collected cash from those sales. Accrued expenses decrease net income, but the company has not paid cash *if the expenses are accrued.*

To go from net income to cash flow from operating activities, we must make some adjustments to net income on the statement of cash flows. These additions and subtractions follow net income and are labeled *Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities.*

Depreciation, Depletion, and Amortization Expenses

These adjustments include adding back non-cash expenses such as depreciation, depletion, and amortization expenses. These expenses are added back to net income to reconcile net income to net cash flow from operating activities. Let's see why this occurs. Depreciation is recorded as follows:

A↓		**L**	+	**E↓**
Accumulated Depreciation↑	=			Depreciation Expense↑

Date	Accounts and Explanation	Debit	Credit
	Depreciation Expense—Plant Assets	20,000	
	Accumulated Depreciation—Plant Assets		20,000

You can see that depreciation does not affect cash as there is no Cash account in the journal entry. Depreciation is a non-cash expense. The cash outflow related to depreciation occurred when the asset was purchased, not as it is depreciated. However, depreciation, like all the other expenses, decreases net income. Therefore, to go from net income to cash flows, we must remove depreciation by adding it back to net income.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Net Income		$ 40,000
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:		
Depreciation Expense—Plant Assets	$ 20,000	

Suppose you had only two transactions during the period:

- Cash sale of $60,000
- Depreciation expense of $20,000

Accrual basis net income is $40,000 ($60,000 – $20,000), but cash flow from operations is $60,000. To reconcile from net income, depreciation of $20,000 must be added to net income, $40,000, to determine net cash flow from operations, $60,000. We would also add back any depletion and amortization expenses because they are non-cash expenses, similar to depreciation.

Gains and Losses on the Disposal of Long-Term Assets

Disposals of long-term assets such as land and buildings are investing activities, and these disposals usually create a gain or a loss. The gain or loss is included in net income, which is already in the operating activities section of the statement of cash flows. The gain or loss must be removed from net income on the statement of cash flows so the total cash receipts from the sale of the asset can be shown in the investing section.

Exhibit 14-4, ShopMart's income statement, includes a gain on disposal of plant assets. During 2016, ShopMart sold equipment, and there was a gain of $10,000 on the sale. The gain was included in the calculation of net income on the income statement, so the gain must be removed from operating cash flows. The gain increased net income, so it is subtracted in the operating activities section.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Net Income		$ 40,000
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:		
Depreciation Expense—Plant Assets	$ 20,000	
Gain on Disposal of Plant Assets	(10,000)	

On the other hand, a loss on the disposal of plant assets would decrease net income on the income statement, so the amount of the loss would be reversed to determine the net cash provided by operating activities on the statement of cash flows. For example, a $5,000 loss on disposal of plant assets would be a $5,000 addition to net income on the statement of cash flows to determine net cash provided by operating activities.

What if there is a loss on disposal of plant assets?

Changes in Current Assets and Current Liabilities

Most current assets and current liabilities result from operating activities. For example:

- Accounts receivable result from sales.
- Merchandise inventory relates to cost of goods sold, and so on.

Changes in the current asset and current liability accounts create adjustments to net income on the statement of cash flows, as follows:

- **An increase in a current asset other than cash causes a decrease in cash.** If Accounts Receivable, Merchandise Inventory, or Prepaid Expenses increases, then cash decreases. Therefore, we subtract the increase in the current asset from net income to get net cash flow from operating activities. For example, in Exhibit 14-3, ShopMart's Accounts Receivable increased by $17,000. This increase in the current asset shows that there were more sales on account than cash collections from customers and is reported as a decrease in cash on the statement of cash flows.
- **A decrease in a current asset other than cash causes an increase in cash.** ShopMart's Merchandise Inventory decreased by $2,000. What caused the decrease? ShopMart must have sold some merchandise inventory and collected cash. Therefore, we add the decrease in Merchandise Inventory of $2,000 in the statement of cash flows.
- **An increase in a current liability causes an increase in cash.** ShopMart's Accounts Payable increased by $40,000. This means that cash was not spent at the time the expense was incurred, but rather it will be paid at a later time—resulting in a liability. Accordingly, even though net income was reduced by the expense, cash was not reduced. However, cash will be reduced later when ShopMart pays off its liability. Therefore, an increase in a current liability is added to net income in the statement of cash flows.

- **A decrease in a current liability causes a decrease in cash.** The payment of a current liability decreases cash. Therefore, we subtract decreases in current liabilities from net income to get net cash flow from operating activities. ShopMart's Accrued Liabilities decreased by $5,000. That change shows up as a $5,000 decrease in cash flows.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Net Income		$ 40,000
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:		
Depreciation Expense—Plant Assets	$ 20,000	
Gain on Disposal of Plant Assets	(10,000)	
Increase in Accounts Receivable	(17,000)	
Decrease in Merchandise Inventory	2,000	
Increase in Accounts Payable	40,000	
Decrease in Accrued Liabilities	(5,000)	30,000

DECISIONS

What can be done to create a positive cash flow?

Meggie Mohamed, CEO, knew that the bank would carefully review her company's most recent statement of cash flows before determining if it would approve the loan needed for expansion. The bank loan officer had told her that it is important that the business show strong operating cash flows. Meggie knows that her company's operating cash flow for this past quarter will most likely be negative. Although the company recorded significant revenue, most of the revenue was recorded as receivables. Meggie expects that the cash will come in soon, but not in time to report a positive operating cash flow. What should Meggie do? What would you do?

Solution

Meggie could explain to the bank officer that her company is expecting to collect a significant amount of cash in the near future on outstanding receivables. She could provide detailed collection information including the estimated time frame of collection and the amount expected. Meggie also has another option. She could look into selling the receivables to another business, often called a factor. By selling the receivables, the company will be able to decrease its accounts receivable balance, increase its cash balance, and report a positive change in operating cash flows.

Evaluating Cash Flows from Operating Activities

During 2016, ShopMart's operating activities provided a net cash inflow of $70,000 ($40,000 + $30,000), so the amount is labeled Net Cash *Provided by* Operating Activities. If this amount were a net cash outflow, ShopMart would report Net Cash *Used for* Operating Activities.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Net Income		$ 40,000
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:		
Depreciation Expense—Plant Assets	$ 20,000	
Gain on Disposal of Plant Assets	(10,000)	
Increase in Accounts Receivable	(17,000)	
Decrease in Merchandise Inventory	2,000	
Increase in Accounts Payable	40,000	
Decrease in Accrued Liabilities	(5,000)	30,000
Net Cash Provided by Operating Activities		70,000

The operating activities section (indirect method) always starts with accrual basis net income. Adjustments are then made to determine the cash basis net income. Exhibit 14-6 summarizes the adjustments made to reconcile net income to net cash provided by operating activities.

Exhibit 14-6 **Adjustments Made to Reconcile Net Income to Net Cash Provided by Operating Activities**

Item	Adjustment on Statement of Cash Flows
Depreciation, Depletion, and Amortization Expense	+
Gains on Disposal of Long-term Assets	–
Losses on Disposal of Long-term Assets	+
Increases in Current Assets other than Cash	–
Decreases in Current Assets other than Cash	+
Increases in Current Liabilities	+
Decreases in Current Liabilities	–

Cash Flows from Investing Activities

Investing activities affect long-term assets, such as Plant Assets, Investments, and Notes Receivable. These are shown on ShopMart's balance sheet (Exhibit 14-3). Now, let's see how to compute the investing cash flows.

When computing investing cash flows, it is helpful to evaluate the T-accounts for each long-term asset. The T-account will show if there was an acquisition or disposal that happened during the year. Let's look at the Plant Assets and Accumulated Depreciation accounts for ShopMart.

Plant Assets

12/31/2015	252,000		
Acquisitions	310,000	55,000	Disposals
12/31/2016	507,000		

Accumulated Depreciation—Plant Assets

		42,000	12/31/2015
Disposals	15,000	20,000	Depr. Exp.
		47,000	12/31/2016

Depreciation Expense is from the income statement.

The beginning and ending balances for each account are taken directly from the comparative balance sheet. Depreciation expense has been included in the Accumulated Depreciation account, and this was taken from the income statement. The acquisition and disposal information came from the additional information provided when we introduced the example:

- Purchased $310,000 in plant assets by paying cash.
- Sold plant assets with a cost of $55,000 and accumulated depreciation of $15,000, yielding a gain of $10,000.

We now know that ShopMart paid $310,000 cash to purchase plant assets. This item is listed first in the investing activities section and shown as an outflow of cash, as indicated by the parentheses.

Next we need to determine the amount of cash received for the disposal of plant assets. Using the information provided, we can recreate the journal entry for the disposal and solve for the missing cash amount.

A↑		**L**	+	**E↑**
Cash↑ Accumulated Depreciation↓ Plant Assets↓	=			Gain on Disposal↑

Date	Accounts and Explanation	Debit	Credit
	Cash	?	
	Accumulated Depreciation—Plant Assets	15,000	
	Gain on Disposal of Plant Assets		10,000
	Plant Assets		55,000

We compute the cash receipt from the disposal as follows:

Cash received = Cost − Accumulated Depreciation + Gain − Loss
= $55,000 − $15,000 + $10,000
= $50,000

The cash receipt from the sale of plant assets of $50,000 is shown next in the investing activities section. As there are no other changes to long-term assets, the net cash from investing activities is determined. Notice that this is a net cash outflow, as indicated by the parentheses, and is reported as Net Cash *Used for* Investing Activities.

In this partial statement, we are showing only the investing activities section of the statement of cash flows. Remember that the investing activities section is reported after the operating activities section.

SHOPMART, INC. Statement of Cash Flows (Partial) Year Ended December 31, 2016		
Cash Flows from Investing Activities:		
Cash Payment for Acquisition of Plant Assets	(310,000)	
Cash Receipt from Disposal of Plant Assets	50,000	
Net Cash Used for Investing Activities		(260,000)

Cash Flows from Financing Activities

Financing activities affect the long-term liability and equity accounts, such as Long-Term Notes Payable, Bonds Payable, Common Stock, and Retained Earnings. To determine the cash flows from financing activities, we need to review each of these account types.

Long-Term Liabilities

The T-account for ShopMart's Notes Payable is shown below. Additional information concerning notes payable is also provided by the company as follows:

- Received $90,000 cash from issuance of notes payable.
- Paid $10,000 cash to retire notes payable.

Notes Payable

		80,000	12/31/2015
Payment	10,000	90,000	Issuance
		160,000	12/31/2016

The beginning and ending balances of Notes Payable are taken from the comparative balance sheet. For ShopMart, a new issuance of notes payable is known to be a $90,000 cash receipt and is shown by the following journal entry:

Date	Accounts and Explanation	Debit	Credit
	Cash	90,000	
	Notes Payable		90,000

A↑ = **L↑** + **E**

Cash↑ = Notes Payable↑

In addition, ShopMart paid $10,000 cash to retire notes payable.

Date	Accounts and Explanation	Debit	Credit
	Notes Payable	10,000	
	Cash		10,000

A↓ = **L↓** + **E**

Cash↓ = Notes Payable↓

The cash inflow and cash outflow associated with these notes payable are listed first in the cash flows from financing activities section.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Financing Activities:	
Cash Receipt from Issuance of Notes Payable	90,000
Cash Payment of Notes Payable	(10,000)

ETHICS

Should the notes payable be reclassified?

Michael Reinstein had just left the office of his supervisor, Scott Medley. The supervisor had mentioned that Michael should reclassify a cash receipt from issuance of long-term notes payable as a short-term notes payable. Scott had shared with Michael that the chairman of the Board of Directors was placing intense pressure on him to report a positive cash flow from operating activities. Michael knew that if the company reclassified the notes payable, the business would no longer report the receipt in the financing activities section of the statement of cash flows. Instead, it would be shown as an increase in current liabilities resulting in a positive cash flow from operating activities. What should Michael do?

Solution

Michael should not reclassify the notes payable. By reclassifying the note, the company is misleading investors and reporting a positive operating cash flow when it does not have one. This misclassification is a violation of GAAP. If a notes payable is long-term, it should be reported in the financing activities section of the statement of cash flows.

Common Stock and Treasury Stock

Cash flows for financing activities are also determined by analyzing the stock accounts. For example, the amount of new issuances of stock is determined by analyzing the stock accounts and reviewing the additional information provided:

- Received $120,000 cash from issuing shares of common stock.
- Paid $20,000 cash for purchase of shares of treasury stock.

ShopMart's stock T-accounts are as follows:

Common Stock

		250,000	12/31/2015
Retirement	0	120,000	Issuance
		370,000	12/31/2016

Treasury Stock

12/31/2015	0		
Purchase	20,000	0	Disposal
12/31/2016	20,000		

The common stock account shows a new stock issuance of $120,000 and would be recorded by the following journal entry:

Date	Accounts and Explanation	Debit	Credit
	Cash	120,000	
	Common Stock		120,000

A↑	=	L	+	E↑
Cash↑				Common Stock↑

This is shown as $120,000 cash inflow in the financing activities section of the statement.

Treasury stock also changed on ShopMart's balance sheet. The T-account is showing an acquisition of treasury stock that would be recorded as follows:

Date	Accounts and Explanation	Debit	Credit
	Treasury Stock	20,000	
	Cash		20,000

A↓	=	L	+	E↓
Cash↓				Treasury Stock↑

The $20,000 is shown as a cash outflow in the financing section of the statement of cash flows for the purchase of treasury stock.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Financing Activities:	
Cash Receipt from Issuance of Notes Payable	90,000
Cash Payment of Notes Payable	(10,000)
Cash Receipt from Issuance of Common Stock	120,000
Cash Payment for Purchase of Treasury Stock	(20,000)

Computing Dividend Payments

The amount of dividend payments can be computed by analyzing the Retained Earnings account. First, we input the balances from the balance sheet:

Retained Earnings

		80,000	12/31/2015
Net Loss	?	?	Net Income
Dividends	?		
		110,000	12/31/2016

Retained Earnings increases when companies earn net income. Retained Earnings decreases when companies have a net loss and when they declare dividends. We know that ShopMart earned net income of $40,000 from the income statement in Exhibit 14-4.

Retained Earnings

		80,000	12/31/2015
Net Loss	?	40,000	Net Income
Dividends	?		
		110,000	12/31/2016

Net Income is from the income statement.

ShopMart can't have both net income and net loss for the same period; therefore, the missing value must be the amount of dividends ShopMart declared. Solving for the dividends follows:

Ending Retained Earnings = Beginning Retained Earnings + Net income − Net loss − Dividends
$110,000 = $80,000 + $40,000 − $0 − Dividends
Dividends = $80,000 + $40,000 − $0 − $110,000
Dividends = $10,000

So our final Retained Earnings T-account shows the following:

Retained Earnings

		80,000	12/31/2015
		40,000	Net Income
Dividends	10,000		
		110,000	12/31/2016

A stock dividend has *no* effect on Cash and is *not* reported in the financing activities section of the statement of cash flows. ShopMart had no stock dividends, only cash dividends, which will be shown as an outflow in the financing activities section of the statement of cash flows.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Financing Activities:		
Cash Receipt from Issuance of Notes Payable	$ 90,000	
Cash Payment of Notes Payable	(10,000)	
Cash Receipt from Issuance of Common Stock	120,000	
Cash Payment for Purchase of Treasury Stock	(20,000)	
Cash Payment of Dividends	(10,000)	
Net Cash Provided by Financing Activities		170,000

Net Change in Cash and Cash Balances

To complete the statement of cash flows, the net change in cash and its effect on the beginning cash balance must be shown. This represents the total change in cash for the period and reconciles the statement of cash flows. First, the net increase or decrease in cash is computed by combining the cash provided by or used for operating, investing, and financing activities. In the case of ShopMart, there is a net decrease in the cash balance of $20,000 for the year and is calculated as follows:

Net Increase (Decrease) in Cash = Net Cash Provided by Operating Activities − Net Cash Used for Investing Activities + Net Cash Provided by Financing Activities
= $70,000 − $260,000 + $170,000
= $(20,000)

Next, the beginning cash from December 31, 2015, is listed at $42,000, as shown on the comparative balance sheet. The net decrease of $20,000 is subtracted from beginning cash of $42,000, which equals the ending cash balance on December 31, 2016, of $22,000. This is the key to the statement of cash flows—it explains why the cash balance for ShopMart decreased by $20,000, even though the company reported net income for the year.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Net Cash Provided by Operating Activities	$ 70,000
Net Cash Used for Investing Activities	(260,000)
Net Cash Provided by Financing Activities	170,000
Net Increase (Decrease) in Cash	(20,000)
Cash Balance, December 31, 2015	42,000
Cash Balance, December 31, 2016	**$ 22,000**

Before moving on, take a moment to review the completed Statement of Cash Flows shown earlier in Exhibit 14-5.

Non-cash Investing and Financing Activities

The last step in preparing the statement of cash flows is to prepare the non-cash investing and financing activities section. This section appears as a separate schedule of the statement of cash flows or in the notes to the financial statements. Our ShopMart example did not include transactions of this type because the company did not have any non-cash transactions during the year. So, to illustrate them, let's consider three non-cash transactions for another fictitious company, The Outdoors, Inc. How would they be reported? First, we gather the non-cash activities for the company:

1. Acquired $300,000 building by issuing common stock.
2. Acquired $70,000 land by issuing notes payable.
3. Retired $100,000 notes payable by issuing common stock.

Now, we consider each transaction individually.

1. The Outdoors issued common stock of $300,000 to acquire a building. The journal entry to record the purchase would be as follows:

A↑	=	**L**	+	**E↑**
Building↑				Common Stock↑

Date	Accounts and Explanation	Debit	Credit
	Building	300,000	
	Common Stock		300,000

This transaction would not be reported on the statement of cash flows because no cash was paid or received. But the building and the common stock are important. The purchase of the building is an investing activity. The issuance of common stock is a financing activity. Taken together, this transaction is a *non-cash investing and financing activity.*

2. The second transaction listed indicates that The Outdoors acquired $70,000 of land by issuing a note. The journal entry to record the purchase would be as follows:

A↑	=	**L↑**	+	**E**
Land↑		Notes Payable↑		

Date	Accounts and Explanation	Debit	Credit
	Land	70,000	
	Notes Payable		70,000

This transaction would not be reported on the statement of cash flows because no cash was paid or received. But the land and the notes payable are important. The purchase of the land is an investing activity. The issuance of the note is a financing activity. Taken together, this transaction is a *non-cash investing and financing activity.*

3. The third transaction listed indicates that The Outdoors exchanged $100,000 of debt by issuing common stock. The journal entry to record the transaction would be as follows:

A	=	**L↓**	+	**E↑**
		Notes Payable↓		Common Stock↑

Date	Accounts and Explanation	Debit	Credit
	Notes Payable	100,000	
	Common Stock		100,000

This transaction would not be reported on the statement of cash flows because no cash was paid or received. But the notes payable and the stock issuance are important. The payment on the note and the issuance of the common stock are both financing activities. Taken together, this transaction, even though it is two financing transactions, is reported in the *non-cash investing and financing activities.*

Non-cash investing and financing activities are reported in a separate part of the statement of cash flows. Exhibit 14-7 illustrates non-cash investing and financing activities for The Outdoors. This information is either reported as a separate schedule following the statement of cash flows or can be disclosed in a note.

Exhibit 14-7 | **Non-cash Investing and Financing Activities**

THE OUTDOORS, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Non-cash Investing and Financing Activities:	
Acquisition of building by issuing common stock	$ 300,000
Acquisition of land by issuing notes payable	70,000
Retirement of notes payable by issuing common stock	100,000
Total Non-cash Investing and Financing Activities	**$ 470,000**

Try It!

6. Owl, Inc.'s accountants have assembled the following data for the year ended December 31, 2016:

Cash receipt from sale of equipment	$ 20,000
Depreciation expense	12,000
Cash payment of dividends	4,000
Cash receipt from issuance of common stock	12,000
Net income	30,000
Cash purchase of land	25,000
Increase in current liabilities	10,000
Decrease in current assets other than cash	8,000

Prepare Owl's statement of cash flows using the indirect method for the year ended December 31, 2016. Assume beginning and ending Cash are $12,000 and $75,000 respectively.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S14-3 through S14-9. MyAccountingLab

HOW DO WE USE FREE CASH FLOW TO EVALUATE BUSINESS PERFORMANCE?

Learning Objective 3
Use free cash flow to evaluate business performance

Throughout this chapter, we have focused on cash flows from operating, investing, and financing activities. Some investors want to know how much cash a company can "free up" for new opportunities. **Free cash flow** is the amount of cash available from operating activities after paying for planned investments in long-term assets and after paying cash dividends to shareholders. Free cash flow can be computed as follows:

Free cash flow = Net cash provided by operating activities − Cash payments planned for investments in long-term assets − Cash dividends

Free Cash Flow
The amount of cash available from operating activities after paying for planned investments in long-term assets and after paying dividends to shareholders. Net cash provided by operating activities − Cash payments planned for investments in long-term assets − Cash dividends.

Many companies use free cash flow to estimate the amount of cash that would be available for unexpected opportunities. Suppose ShopMart expects net cash provided by operations of $200,000. Assume the company plans to spend $160,000 to modernize its retail facilities and pays $15,000 in cash dividends. In this case, ShopMart's free cash flow would be $25,000 ($200,000 − $160,000 − $15,000). If a good investment opportunity comes along, the company should have $25,000 cash available to invest.

Try It!

7. Kalapono Company expects the following for 2016:
   - Net cash provided by operating activities of $100,000.
   - Net cash provided by financing activities of $10,000.
   - Net cash used for investing activities of $20,000 (no sales of long-term assets).
   - Cash dividends paid to stockholders was $2,000.

How much free cash flow does Kalapono expect for 2016?

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S14-10. MyAccountingLab

APPENDIX 14A: Preparing the Statement of Cash Flows by the Direct Method

HOW IS THE STATEMENT OF CASH FLOWS PREPARED USING THE DIRECT METHOD?

Learning Objective 4
Prepare the statement of cash flows by the direct method

The Financial Accounting Standards Board (FASB) prefers the direct method of reporting cash flows from operating activities. The direct method provides clearer information about the sources and uses of cash than does the indirect method. However, very few non-public companies use the direct method because it takes more computations than the indirect method. Investing and financing cash flows are exactly the same presentation under both direct and indirect methods. Because only the preparation of the operating activities section differs, it is all we discuss in this appendix.

To illustrate how the operating activities section of the statement of cash flows differs for the direct method, we use the ShopMart data we used within the main chapter.

Cash Flows from Operating Activities

In the indirect method, we start with accrual basis net income and then adjust it to cash basis through a series of adjusting items. When using the direct method, we take each line item of the income statement and convert it from accrual to cash basis. So, in essence, the operating activities section of the direct-method cash flows statement is really just a cash-basis income statement. Now let's apply this information to ShopMart.

Cash Collections from Customers

The first item on the income statement is Sales Revenue. Sales Revenue represents the total of all sales, whether for cash or on account. The balance sheet account related to Sales

Revenue is Accounts Receivable. Accounts Receivable went from $73,000 at December 31, 2015, to $90,000 at December 31, 2016, an increase of $17,000. Sales Revenue can be converted to cash receipts from customers as follows:

Cash receipts from customers = Sales Revenue + Beginning Accounts Receivable − Ending Accounts Receivable
= $286,000 + $73,000 − $90,000
= $269,000

The increase in Accounts Receivable represents the net amount of sales on account not collected from customers.

Accounts Receivable

12/31/2015	73,000	
Increase	17,000	
12/31/2016	90,000	

Sales Revenue

	286,000

When a company records a credit to Sales Revenue, it either debits Cash or debits Accounts Receivable.

So, the cash ShopMart received from customers is $269,000. This is the first item in the operating activities section of the direct-method statement of cash flows.

SHOPMART, INC. Statement of Cash Flows (Partial) Year Ended December 31, 2016	
Cash Flows from Operating Activities:	
Receipts:	
Collections from Customers	$ 269,000

Had ShopMart had a decrease in Accounts Receivable, the amount of cash collections from customers would be higher than Sales Revenue.

Cash Receipts of Interest

The income statement reports interest revenue of $12,000. The balance sheet account related to Interest Revenue is Interest Receivable. Because there is no Interest Receivable account on the balance sheet, the interest revenue must have all been received in cash. So, the statement of cash flows shows interest received of $12,000.

SHOPMART, INC. Statement of Cash Flows (Partial) Year Ended December 31, 2016	
Cash Flows from Operating Activities:	
Receipts:	
Collections from Customers	$ 269,000
Interest Received	12,000

Cash Receipts of Dividends

The income statement reports dividend revenue of $9,000. The balance sheet account related to Dividend Revenue is Dividends Receivable. As with the interest, there is no Dividends Receivable account on the balance sheet. Therefore, the dividend revenue must have all been received in cash. So, the statement of cash flows shows cash received from dividends of $9,000.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Receipts:		
Collections from Customers	$ 269,000	
Interest Received	12,000	
Dividends Received on Investments	9,000	
Total Cash Receipts		$ 290,000

Payments to Suppliers

Payments to suppliers include all payments for the following:

- Merchandise inventory
- Operating expenses except employee compensation, interest, and income taxes

Suppliers, also called vendors, are those entities that provide the business with its merchandise inventory and essential services. The accounts related to supplier payments for merchandise inventory are Cost of Goods Sold, Merchandise Inventory, and Accounts Payable. Cost of Goods Sold on the income statement was $156,000. Merchandise Inventory decreased from $145,000 at December 31, 2015, to $143,000 at December 31, 2016. Accounts Payable increased from $50,000 at December 31, 2015, to $90,000 at December 31, 2016. We can calculate the cash paid for inventory as follows:

Cash paid for merchandise inventory = Cost of Goods Sold − Beginning Merchandise Inventory + Ending Merchandise Inventory + Beginning Accounts Payable − Ending Accounts Payable
= $156,000 − $145,000 + $143,000 + $50,000 − $90,000
= $114,000

When a company records a debit to Merchandise Inventory, it either credits Cash or credits Accounts Payable.

Merchandise Inventory

12/31/2015	145,000		
Purchased	154,000	156,000	Sold
12/31/2016	143,000		

Accounts Payable

		50,000	12/31/2015
		40,000	Increase
		90,000	12/31/2016

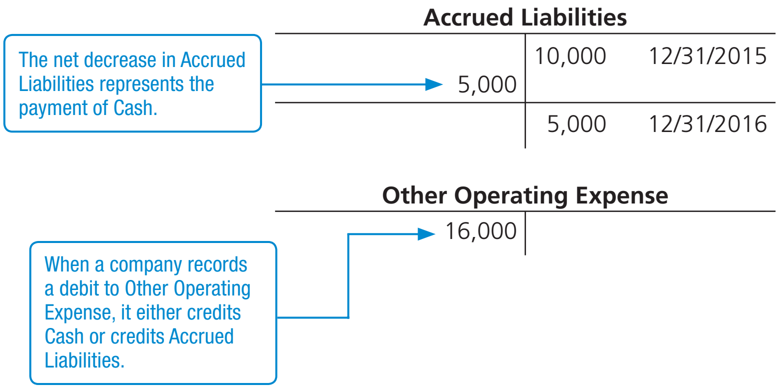
The increase in Accounts Payable represents the net amount of Merchandise Inventory that was purchased on account but not yet paid.

Cost of Goods Sold

Sold	156,000		

The accounts related to supplier payments for operating expenses are Other Operating Expense and Accrued Liabilities. Other operating expenses on the income statement were $16,000. Accrued Liabilities decreased from $10,000 at December 31, 2015, to $5,000 at December 31, 2016. Cash paid for operating expenses can be calculated as follows:

Cash paid for operating expenses = Other Operating Expense + Beginning Accrued Liabilities − Ending Accrued Liabilities
= $16,000 + $10,000 − $5,000
= $21,000



Adding them together, we get total cash paid to suppliers of $135,000 ($114,000 + $21,000).

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Receipts:		
Collections from Customers	$ 269,000	
Interest Received	12,000	
Dividends Received on Investments	9,000	
Total Cash Receipts		$ 290,000
Payments:		
To Suppliers	(135,000)	

Payments to Employees

This category includes payments for salaries, wages, and other forms of employee compensation. Accrued amounts are not cash flows because they have not yet been paid. The accounts related to employee payments are Salaries and Wages Expense from the income statement and Salaries and Wages Payable from the balance sheet. Because there is not a Salaries and Wages Payable account on the balance sheet, the Salaries and Wages Expense account must represent all amounts paid in cash to employees. So, the statement of cash flows shows cash payments to employees of $56,000.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Receipts:		
Collections from Customers	$ 269,000	
Interest Received	12,000	
Dividends Received on Investments	9,000	
Total Cash Receipts		$ 290,000
Payments:		
To Suppliers	(135,000)	
To Employees	(56,000)	

Payments for Interest Expense and Income Tax Expense

These cash payments are reported separately from the other expenses. The accounts related to interest payments are Interest Expense from the income statement and Interest Payable from the balance sheet. Because there is no Interest Payable account on the balance sheet, the Interest Expense account from the income statement must represent all amounts paid in cash for interest. So, the statement of cash flows shows cash payments for interest of $15,000.

The accounts related to income tax payments are Income Tax Expense from the income statement and Income Tax Payable from the balance sheet. Because there is no Income Tax Payable account on the balance sheet, the Income Tax Expense account from the income statement must represent all amounts paid in cash for income tax. So, the statement of cash flows shows cash payments for income tax of $14,000.

SHOPMART, INC.
Statement of Cash Flows (Partial)
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Receipts:		
Collections from Customers	$ 269,000	
Interest Received	12,000	
Dividends Received on Investments	9,000	
Total Cash Receipts		$ 290,000
Payments:		
To Suppliers	(135,000)	
To Employees	(56,000)	
For Interest	(15,000)	
For Income Tax	(14,000)	
Total Cash Payments		(220,000)

Are depreciation expense and gain or loss on disposal of plant assets included in the operating activities section when using the direct method?

Non-cash Expenses and Gains or Losses on Disposal of Long-Term Assets

Non-cash expenses and gains or losses on disposal of long-term assets are reported on the income statement but are not included in the operating activities when using the direct method. Non-cash expenses are not reported because these items do not affect cash.

The cash received from the disposal of long-term assets is reported in the investing activities section, not the operating activities section.

Net Cash Provided by Operating Activities

To calculate net cash provided by operating activities using the direct method, we add all the cash receipts and cash payments described previously and find the difference. For ShopMart, total cash receipts were $290,000. Total cash payments were $220,000. So, net cash provided by operating activities is $70,000. If you refer back to the indirect method statement of cash flows shown in Exhibit 14-5, you will find that it showed the same $70,000 for net cash provided by operating activities—only the method by which it was calculated was different.

The remainder of ShopMart's statement of cash flows is exactly the same as what we calculated using the indirect method. Exhibit 14A-1 shows the completed statement of cash flows using the direct method for operating activities.

Exhibit 14A-1 | **Statement of Cash Flows—Direct Method**

SHOPMART, INC.
Statement of Cash Flows
Year Ended December 31, 2016

Cash Flows from Operating Activities:		
Receipts:		
Collections from Customers	$ 269,000	
Interest Received	12,000	
Dividends Received on Investments	9,000	
Total Cash Receipts		$ 290,000
Payments:		
To Suppliers	(135,000)	
To Employees	(56,000)	
For Interest	(15,000)	
For Income Tax	(14,000)	
Total Cash Payments		(220,000)
Net Cash Provided by Operating Activities		70,000
Cash Flows from Investing Activities:		
Cash Payment for Acquisition of Plant Assets	(310,000)	
Cash Receipt from Disposal of Plant Assets	50,000	
Net Cash Used for Investing Activities		(260,000)
Cash Flows from Financing Activities:		
Cash Receipt from Issuance of Notes Payable	90,000	
Cash Payment of Notes Payable	(10,000)	
Cash Receipt from Issuance of Common Stock	120,000	
Cash Payment for Purchase of Treasury Stock	(20,000)	
Cash Payment of Dividends	(10,000)	
Net Cash Provided by Financing Activities		170,000
Net Increase (Decrease) in Cash		(20,000)
Cash Balance, December 31, 2015		42,000
Cash Balance, December 31, 2016		**$ 22,000**

Try It!

8A. Big Island, Inc. began 2016 with cash of $40,000. During the year, Big Island earned revenue of $200,000 and collected $120,000 from customers. Expenses for the year totaled $160,000, of which Big Island paid $65,000 in cash to suppliers and $80,000 in cash to employees. The company received $2,000 cash for interest revenue and paid $10,000 for income taxes. Big Island also paid $35,000 to purchase equipment and a cash dividend of $15,000 to its stockholders during 2016. Prepare the company's operating activities section of the statement of cash flows for the year ended December 31, 2016. Use the direct method.

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S14A-11 through S14A-14. MyAccountingLab

APPENDIX 14B: Preparing the Indirect Statement of Cash Flows Using a Spreadsheet

HOW IS THE STATEMENT OF CASH FLOWS PREPARED USING THE INDIRECT METHOD AND A SPREADSHEET?

Learning Objective 5

Prepare the statement of cash flows by the indirect method using a spreadsheet

This chapter discussed the uses of the statement of cash flows in decision making and showed how to prepare the statement using T-accounts. The T-account approach works well as a learning device. In practice, however, most companies face complex situations. In these cases, a spreadsheet can help in preparing the statement of cash flows.

The spreadsheet starts with the beginning balance sheet and concludes with the ending balance sheet. Two middle columns—one for debit amounts and the other for credit amounts—complete the spreadsheet. These columns, labeled "Transaction Analysis," hold the data for the statement of cash flows. Accountants can prepare the statement directly from the lower part of the spreadsheet. This appendix is based on the ShopMart data used in this chapter. We illustrate this approach only with the indirect method for operating activities. This method could be used for the direct method as well.

The *indirect* method reconciles accrual basis net income to net cash provided by operating activities. Exhibit 14B-1 is the spreadsheet for preparing the statement of cash flows by the *indirect* method. Panel A shows the transaction analysis, and Panel B gives the information to prepare the statement of cash flows.

Exhibit 14B-1 Spreadsheet for Statement of Cash Flows—Indirect Method

	A	B	C	D	E	F	G
1	**SHOPMART, INC.**						
2	**Spreadsheet for Statement of Cash Flows**						
3	**Year Ended December 31, 2016**						
4							
5	**Panel A—Balance Sheet:**	**Balance 12/31/2015**		**Transaction Analysis**			**Balance 12/31/2016**
6				**DEBIT**	**CREDIT**		
7	Cash	$ 42,000			20,000	(n)	$ 22,000
8	Accounts Receivable	73,000	(d)	17,000			90,000
9	Merchandise Inventory	145,000			2,000	(e)	143,000
10	Plant Assets	252,000	(h)	310,000	55,000	(c)	507,000
11	Accumulated Depreciation—Plant Assets	(42,000)	(c)	15,000	20,000	(b)	(47,000)
12	Total Assets	**$ 470,000**					**$ 715,000**
13							
14	Accounts Payable	50,000			40,000	(f)	90,000
15	Accured Liabilities	10,000	(g)	5,000			5,000
16	Notes Payable	80,000	(j)	10,000	90,000	(i)	160,000
17	Total Liabilities	140,000					255,000
18							
19	Common Stock, no par	250,000			120,000	(k)	370,000
20	Retained Earnings	80,000	(m)	10,000	40,000	(a)	110,000
21	Treasury Stock	0	(l)	20,000			(20,000)
22	Total Liabilities and Stockholders' Equity	**$ 470,000**		**$ 387,000**	**$ 387,000**		**$ 715,000**
23							
24	**Panel B—Statement of Cash Flows:**						
25	Cash Flows from Operating Activities:						
26	Net Income		(a)	40,000			
27	Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:						
28	Depreciation Expense—Plant Assets		(b)	20,000			
29	Gain on Disposal of Plant Assets				10,000	(c)	
30	Increase in Accounts Receivable				17,000	(d)	
31	Decrease in Merchandise Inventory		(e)	2,000			
32	Increase in Accounts Payable		(f)	40,000			
33	Decrease in Accrued Liabilities				5,000	(g)	
34	Net Cash Provided by Operating Activities						
35	Cash Flows from Investing Activities:						
36	Cash Payment for Acquisition of Plant Assets				310,000	(h)	
37	Cash Receipt from Disposal of Plant Assets		(c)	50,000			
38	Net Cash Used for Investing Activities						
39	Cash Flows from Financing Activities:						
40	Cash Receipt from Issuance of Notes Payable		(i)	90,000			
41	Cash Payment of Notes Payable				10,000	(j)	
42	Cash Receipt from Issuance of Common Stock		(k)	120,000			
43	Cash Payment for Purchase of Treasury Stock				20,000	(l)	
44	Cash Payment of Dividends				10,000	(m)	
45	Net Cash Provided by Financing Activities						
46	Net Increase (Decrease) in Cash		(n)	20,000			
47	**Total**			**$ 382,000**	**$ 382,000**		
48							

The following is a listing of the transaction analysis provided on the spreadsheet using the indirect method:

a. Net income of $40,000 is the first operating cash inflow. Net income is entered on the spreadsheet (Panel B) as a debit to Net Income under Cash Flows from Operating Activities and as a credit to Retained Earnings on the balance sheet (Panel A).

b. Next come the adjustments to net income, starting with depreciation of $20,000—transaction (b)—which is debited to Depreciation Expense—Plant Assets and credited to Accumulated Depreciation—Plant Assets.

c. This transaction is the sale of plant assets. The $10,000 gain on the sale is entered as a credit to Gain on Disposal of Plant Assets—a subtraction from net income—under operating cash flows. This credit removes the $10,000 gain from operating activities because the cash proceeds from the sale were $50,000, not $10,000. The $50,000 sale amount is then entered on the spreadsheet under investing activities. Entry (c) is completed by crediting the plant assets' cost of $55,000 to the Plant Assets account and debiting Accumulated Depreciation—Plant Assets for $15,000.

d. Entry (d) debits Accounts Receivable for its $17,000 increase during the year. This amount is credited to Increase in Accounts Receivable under operating cash flows.

e. This entry credits Merchandise Inventory for its $2,000 decrease during the year. This amount is debited to Decrease in Merchandise Inventory under operating cash flows.

f. This entry credits Accounts Payable for its $40,000 increase during the year. Then it is debited to show as Increase in Accounts Payable under operating cash flows.

g. This entry debits Accrued Liabilities for its $5,000 decrease during the year. Then it is credited to show as Decrease in Accrued Liabilities under operating cash flows.

h. This entry debits Plant Assets for the purchase of $310,000 and credits Cash Payment for Acquisition of Plant Assets under investing cash flows.

i. This entry is represented by a credit to Notes Payable and a debit under cash flows from financing activities of $90,000 (Cash Receipt from Issuance of Notes Payable).

j. This entry is the opposite of (i). It is represented by a debit (reduction) of $10,000 to Notes Payable and a credit under Cash Flows from Financing Activities for Cash Payment of Notes Payable.

k. This entry debits Cash Receipts from Issuance of Common Stock of $120,000 under financing cash flows. The offsetting credit is to Common Stock.

l. The purchase of treasury stock debited the Treasury Stock account on the balance sheet $20,000. The corresponding cash flow entry Cash Payment for Purchase of Treasury Stock credits $20,000 to reduce cash flow.

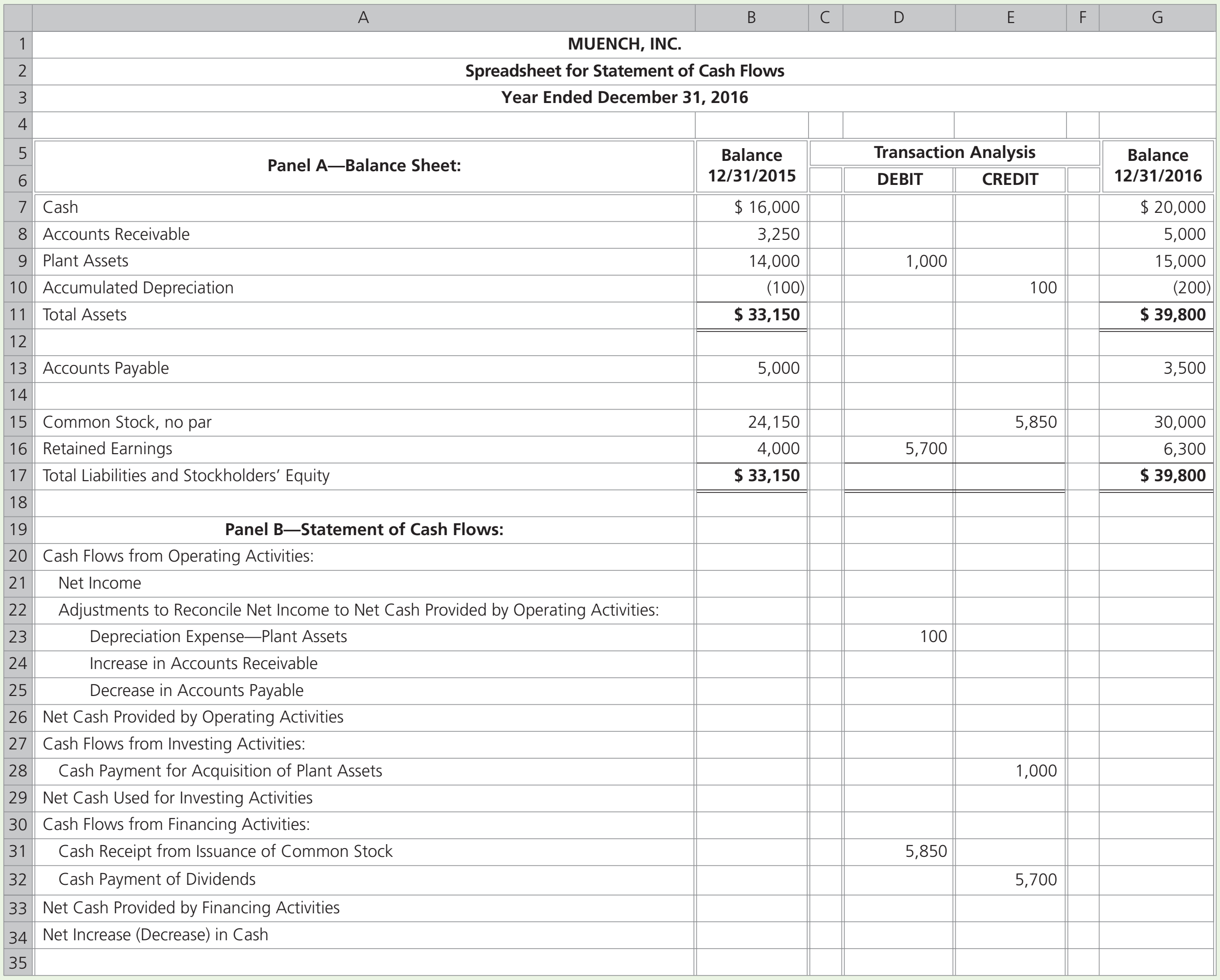
m. The $10,000 reduction (debit) to the Retained Earnings account is the result of dividends declared and paid by the company. So, we show Cash Payment of Dividends as a credit in the financing section.

n. The final item in Exhibit 14B-1 is the Net Increase (Decrease) in Cash. It is shown as a credit to Cash and a debit to Net Increase (Decrease) in Cash of $20,000.

In Panel B of Exhibit 14B-1, the debits represent increases (or inflows) of cash and the credits represent decreases (or outflows). This is because debits increase Cash and credits decrease Cash.

Try It!

9B. Muench, Inc.'s accountant has partially completed the spreadsheet for the statement of cash flows. Fill in the remaining missing information.



	A	B	C	D	E	F	G
1	**MUENCH, INC.**						
2	**Spreadsheet for Statement of Cash Flows**						
3	**Year Ended December 31, 2016**						
4							
5	**Panel A—Balance Sheet:**	**Balance 12/31/2015**		**Transaction Analysis**			**Balance 12/31/2016**
6				**DEBIT**	**CREDIT**		
7	Cash	$ 16,000					$ 20,000
8	Accounts Receivable	3,250					5,000
9	Plant Assets	14,000		1,000			15,000
10	Accumulated Depreciation	(100)			100		(200)
11	Total Assets	**$ 33,150**					**$ 39,800**
12							
13	Accounts Payable	5,000					3,500
14							
15	Common Stock, no par	24,150			5,850		30,000
16	Retained Earnings	4,000		5,700			6,300
17	Total Liabilities and Stockholders' Equity	**$ 33,150**					**$ 39,800**
18							
19	**Panel B—Statement of Cash Flows:**						
20	Cash Flows from Operating Activities:						
21	Net Income						
22	Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:						
23	Depreciation Expense—Plant Assets			100			
24	Increase in Accounts Receivable						
25	Decrease in Accounts Payable						
26	Net Cash Provided by Operating Activities						
27	Cash Flows from Investing Activities:						
28	Cash Payment for Acquisition of Plant Assets				1,000		
29	Net Cash Used for Investing Activities						
30	Cash Flows from Financing Activities:						
31	Cash Receipt from Issuance of Common Stock			5,850			
32	Cash Payment of Dividends				5,700		
33	Net Cash Provided by Financing Activities						
34	Net Increase (Decrease) in Cash						
35							

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S14B-15. MyAccountingLab

REVIEW

> Things You Should Know

1. What is the statement of cash flows?

- The statement of cash flows reports on a business's cash receipts and cash payments for a specific period.
- There are three basic types of cash flow activities:
  - Operating activities—Reports on activities that create revenue or expense in the entity's business
  - Investing activities—Reports cash receipts and cash payments that increase or decrease long-term assets
  - Financing activities—Includes cash receipts and cash payments involved in long-term liabilities and equity
- Non-cash investing and financing activities are not included in the statement of cash flows but appear either as a separate schedule at the bottom of the statement or in the notes to the financial statements.
- There are two ways to format operating activities on the statement of cash flows:
  - Indirect method—Starts with net income and adjusts it to net cash provided by operating activities
  - Direct method—Restates the income statement in terms of cash

2. How is the statement of cash flows prepared using the indirect method?

- **Step 1:** Complete the cash flows from operating activities section using net income and adjusting for increases or decreases in current assets (other than cash) and current liabilities. Also adjust for gains or losses on long-term assets and non-cash expenses.
- **Step 2:** Complete the cash flows from investing activities section by reviewing the long-term assets section of the balance sheet.
- **Step 3:** Complete the cash flows from financing activities section by reviewing the long-term liabilities and equity sections of the balance sheet.
- **Step 4:** Compute the net increase or decrease in cash during the year.
- **Step 5:** Prepare a separate schedule reporting any non-cash investing and financing activities.

3. How do we use free cash flow to evaluate business performance?

- Free cash flow is the amount of cash available from operating activities after paying for planned investments in long-term assets and after paying cash dividends to shareholders.
- Free cash flow = Net cash provided by operating activities − Cash payments planned for investments in long-term assets − Cash dividends.

4. How is the statement of cash flows prepared using the direct method? (Appendix 14A)

- The operating activities section is the only section that differs between the direct and indirect methods.
- When using the direct method, each line item on the income statement is converted from accrual basis to cash basis.

5. **How is the statement of cash flows prepared using the indirect method and a spreadsheet? (Appendix 14B)**
   - A spreadsheet can be used to help in preparing the statement of cash flows.
   - The spreadsheet helps accountants analyze the changes in balance sheet accounts.

> Summary Problem 14-1

The Adams Corporation reported the following income statement for 2016 and comparative balance sheet for 2016 and 2015, along with transaction data for 2016:

ADAMS CORPORATION
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015	Increase (Decrease)
Assets			
Current Assets:			
Cash	$ 22,000	$ 3,000	$ 19,000
Accounts Receivable	22,000	23,000	(1,000)
Merchandise Inventory	35,000	34,000	1,000
Long-term Assets:			
Plants Assets	153,200	97,200	56,000
Accumulated Depreciation—Plant Assets	(27,200)	(25,200)	(2,000)
Total Assets	**$ 205,000**	**$ 132,000**	**$ 73,000**
Liabilities			
Current Liabilities:			
Accounts Payable	$ 35,000	$ 26,000	$ 9,000
Accrued Liabilities	7,000	9,000	(2,000)
Income Tax Payable	10,000	10,000	0
Long-term Liabilities:			
Bonds Payable	84,000	53,000	31,000
Total Liabilities	136,000	98,000	38,000
Stockholders' Equity			
Common Stock, no par	52,000	20,000	32,000
Retained Earnings	27,000	19,000	8,000
Treasury Stock	(10,000)	(5,000)	(5,000)
Total Stockholders' Equity	69,000	34,000	35,000
Total Liabilities and Stockholders' Equity	**$ 205,000**	**$ 132,000**	**$ 73,000**

ADAMS CORPORATION
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 662,000
Cost of Goods Sold		560,000
Gross Profit		102,000
Operating Expenses:		
Salaries and Wages Expense	$ 46,000	
Depreciation Expense—Plant Assets	10,000	
Rent Expense	2,000	
Total Operating Expenses		58,000
Operating Income		44,000
Other Revenue and (Expenses):		
Loss on Disposal of Plant Assets	(2,000)	
Total Other Revenues and (Expenses)		(2,000)
Net Income Before Income Taxes		42,000
Income Tax Expense		16,000
Net Income		**$ 26,000**

Transaction data for 2016	
Cash paid for purchase of equipment	$ 140,000
Cash payment of dividends	18,000
Issuance of common stock to retire bonds payable	13,000
Issuance of bonds payable to borrow cash	44,000
Cash receipt from issuance of common stock	19,000
Cash receipt from sale of equipment (Cost, $84,000; Accumulated Depreciation, $8,000)	74,000
Cash paid for purchase of treasury stock	5,000

Prepare Adams Corporation's statement of cash flows for the year ended December 31, 2016. Format cash flows from operating activities by the indirect method.

> Solution

ADAMS CORPORATION Statement of Cash Flows Year Ended December 31, 2016		
Cash Flows from Operating Activities:		
Net Income		$ 26,000
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities:		
Depreciation Expense—Plant Assets	$ 10,000	
Loss on Disposal of Plant Assets	2,000	
Decrease in Accounts Receivable	1,000	
Increase in Merchandise Inventory	(1,000)	
Increase in Accounts Payable	9,000	
Decrease in Accrued Liabilities	(2,000)	19,000
Net Cash Provided by Operating Activities		45,000
Cash Flows from Investing Activities:		
Cash Payment for Acquisition of Plant Assets	(140,000)	
Cash Receipt from Disposal of Plant Assets	74,000	
Net Cash Used for Investing Activities		(66,000)
Cash Flows from Financing Activities:		
Cash Receipt from Issuance of Bonds Payable	44,000	
Cash Receipt from Issuance of Common Stock	19,000	
Cash Payment for Purchase of Treasury Stock	(5,000)	
Cash Payment of Dividends	(18,000)	
Net Cash Provided by Financing Activities		40,000
Net Increase (Decrease) in Cash		19,000
Cash Balance, December 31, 2015		3,000
Cash Balance, December 31, 2016		**$ 22,000**
Non-cash Investing and Financing Activities:		
Issuance of Common Stock to Retire Bonds Payable		$ 13,000
Total Non-cash Investing and Financing Activities		**$ 13,000**

Relevant T-accounts:

Plant Assets

12/31/2015	97,200		
Acquisitions	140,000	84,000	Disposals
12/31/2016	153,200		

Accumulated Depreciation—Plant Assets

		25,200	12/31/2015
Disposals	8,000	10,000	Depr. Exp.
		27,200	12/31/2016

Bonds Payable

		53,000	12/31/2015
Retirement	13,000	44,000	Issuance
		84,000	12/31/2016

Common Stock

		20,000	12/31/2015
Retirement	0	13,000	Issuance
		19,000	Issuance
		52,000	12/31/2016

Treasury Stock

12/31/2015	5,000		
Purchase	5,000	0	Disposal
12/31/2016	10,000		

Retained Earnings

		19,000	12/31/2015
		26,000	Net Income
Dividends	18,000		
		27,000	12/31/2016

> Key Terms

Cash Flows (p. 723)
Direct Method (p. 726)
Financing Activities (p. 724)
Free Cash Flow (p. 741)
Indirect Method (p. 726)
Investing Activities (p. 724)
Non-cash Investing and Financing Activities (p. 725)
Operating Activities (p. 724)
Statement of Cash Flows (p. 723)

> Quick Check

Learning Objective 1

1. The purposes of the statement of cash flows are to
   - **a.** evaluate management decisions.
   - **b.** determine ability to pay debts and dividends.
   - **c.** predict future cash flows.
   - **d.** All of the above

Learning Objective 1

2. The main categories of cash flow activities are
   - **a.** direct and indirect.
   - **b.** current and long-term.
   - **c.** non-cash investing and financing.
   - **d.** operating, investing, and financing.

Learning Objective 1

3. Operating activities are most closely related to
   - **a.** long-term assets.
   - **b.** current assets and current liabilities.
   - **c.** long-term liabilities and stockholders' equity.
   - **d.** dividends and treasury stock.

Learning Objective 2

4. Which item does *not* appear on a statement of cash flows prepared by the indirect method?
   - **a.** Collections from customers
   - **b.** Depreciation expense
   - **c.** Net income
   - **d.** Gain on sale of land

Learning Objective 2

5. Leather Shop earned net income of $57,000 after deducting depreciation of $5,000 and all other expenses. Current assets decreased by $4,000, and current liabilities increased by $8,000. How much was Leather Shop's cash provided by operating activities (indirect method)?
   - **a.** $40,000
   - **b.** $66,000
   - **c.** $48,000
   - **d.** $74,000

Learning Objective 2

6. The Plant Assets account and Accumulated Depreciation—Plant Assets account of Star Media show the following:

Plant Assets

Beg.	100,000		
Acquisitions	428,000	52,500	Disposals
End.	475,500		

Accumulated Depreciation—Plant Assets

		20,000	12/31/2015
Disposals	10,500	34,000	Depr. Exp.
		43,500	12/31/2016

Star Media sold plant assets at an $11,000 loss. Where on the statement of cash flows should Star Media report the sale of plant assets? How much should the business report for the sale?
   - **a.** Financing cash flows—cash receipt of $42,000
   - **b.** Investing cash flows—cash receipt of $53,000
   - **c.** Investing cash flows—cash receipt of $31,000
   - **d.** Investing cash flows—cash receipt of $42,000

Learning Objective 2

7. Mountain Water Corp. issued common stock of $28,000 to pay off long-term notes payable of $28,000. In what section(s) would these transactions be recorded?
   a. Financing activities payment of note, $(28,000)
   b. Financing activities cash receipt, $28,000
   c. Non-cash investing and financing activities, $28,000
   d. Both a and b are correct.

Learning Objective 3

8. Holmes, Inc. expects net cash flow from operating activities to be $160,000, and the company plans purchases of equipment of $83,000 and repurchases of stock of $24,000. What is Holmes's free cash flow?
   a. $53,000 **b.** $160,000 **c.** $77,000 **d.** $83,000

Learning Objective 4
Appendix 14A

9A. Maxwell Furniture Center had accounts receivable of $20,000 at the beginning of the year and $54,000 at year-end. Revenue for the year totaled $116,000. How much cash did the business collect from customers?
   a. $150,000 **b.** $62,000 **c.** $116,000 **d.** $82,000

Learning Objective 5
Appendix 14B

10B. If accrued liabilities increased during the year, which of the following is correct when using a spreadsheet to complete the statement of cash flows (indirect method)?
   a. Increase in Accrued Liabilities would be debited
   b. Increase in Accrued Liabilities would be credited
   c. Accrued Liabilities would be debited
   d. None of the above is correct.

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What does the statement of cash flows report?
2. How does the statement of cash flows help users of financial statements?
3. Describe the three basic types of cash flow activities.
4. What types of transactions are reported in the non-cash investing and financing activities section of the statement of cash flows?
5. Describe the two formats for reporting operating activities on the statement of cash flows.
6. Describe the five steps used to prepare the statement of cash flows by the indirect method.
7. Explain why depreciation expense, depletion expense, and amortization expense are added to net income in the operating activities section of the statement of cash flows when using the indirect method.
8. If a company experienced a loss on disposal of long-term assets, how would this be reported in the operating activities section of the statement of cash flows when using the indirect method? Why?

9. If current assets other than cash increase, what is the effect on cash? What about a decrease in current assets other than cash?
10. If current liabilities increase, what is the effect on cash? What about a decrease in current liabilities?
11. What accounts on the balance sheet must be evaluated when completing the investing activities section of the statement of cash flows?
12. What accounts on the balance sheet must be evaluated when completing the financing activities section of the statement of cash flows?
13. What should the net change in cash section of the statement of cash flows always reconcile with?
14. What is free cash flow, and how is it calculated?

15A. How does the direct method differ from the indirect method when preparing the operating activities section of the statement of cash flows?

16B. Why might a spreadsheet be helpful when completing the statement of cash flows?

> Short Exercises

S14-1 Describing the purposes of the statement of cash flows

Learning Objective 1

Financial statements all have a goal. The statement of cash flows does as well. Describe how the statement of cash flows helps investors and creditors perform each of the following functions:

a. Predict future cash flows.

b. Evaluate management decisions.

c. Predict the ability to make debt payments to lenders and pay dividends to stockholders.

S14-2 Classifying items on the statement of cash flows

Learning Objective 1

Cash flow items must be categorized into one of four categories. Identify each item as operating (O), investing (I), financing (F), or non-cash (N).

a. Cash purchase of merchandise inventory

b. Cash payment of dividends

c. Cash receipt from the collection of long-term notes receivable

d. Cash payment for income taxes

e. Purchase of equipment in exchange for notes payable

f. Cash receipt from the sale of land

g. Cash received from borrowing money

h. Cash receipt for interest income

i. Cash receipt from the issuance of common stock

j. Cash payment of salaries

Learning Objective 2

S14-3 Classifying items on the indirect statement of cash flows

Destiny Corporation is preparing its statement of cash flows by the *indirect* method. Destiny has the following items for you to consider in preparing the statement:

a. Increase in accounts payable
b. Payment of dividends
c. Decrease in accrued liabilities
d. Issuance of common stock
e. Gain on sale of building
f. Loss on sale of land
g. Depreciation expense
h. Increase in merchandise inventory
i. Decrease in accounts receivable
j. Purchase of equipment

Identify each item as a(n):

- Operating activity—addition to net income (O+) or subtraction from net income (O–)
- Investing activity—cash inflow (I+) or cash outflow (I–)
- Financing activity—cash inflow (F+) or cash outflow (F–)
- Activity that is not used to prepare the indirect statement of cash flows (N)

Learning Objective 2

S14-4 Computing cash flows from operating activities—indirect method

GDM Equipment, Inc. reported the following data for 2016:

Income Statement:	
Net Income	$ 44,000
Depreciation Expense	9,000
Balance Sheet:	
Increase in Accounts Receivable	9,000
Decrease in Accounts Payable	4,000

Compute GDM's net cash provided by operating activities—indirect method.

Learning Objective 2

S14-5 Computing cash flows from operating activities—indirect method

Smart Cellular accountants have assembled the following data for the year ended April 30, 2016:

Cash receipt from sale of land	$ 26,000	Net income	$ 62,000
Depreciation expense	4,000	Cash purchase of equipment	36,000
Cash payment of dividends	5,600	Decrease in current liabilities	18,000
Cash receipt from issuance of common stock	25,000	Increase in current assets other than cash	26,000

Prepare the *operating* activities section using the indirect method for Smart Cellular's statement of cash flows for the year ended April 30, 2016.

Note: Short Exercise S14-5 must be completed before attempting Short Exercise S14-6.

Learning Objective 2

S14-6 Computing cash flows from investing and financing activities

Use the data in Short Exercise S14-5 to complete this exercise. Prepare Smart Cellular's statement of cash flows using the indirect method for the year ended April 30, 2016. Assume beginning and ending Cash are $23,300 and $54,700, respectively.

S14-7 Computing investing and financing cash flows

Learning Objective 2

Kyler Media Corporation had the following income statement and balance sheet for 2016:

KYLER MEDIA CORPORATION Income Statement Year Ended December 31, 2016	
Sales Revenue	$ 80,000
Depreciation Expense—Plant Assets	16,100
Other Expenses	50,000
Net Income	**$ 13,900**

KYLER MEDIA CORPORATION Comparative Balance Sheet December 31, 2016 and 2015		
	2016	2015
Assets		
Current Assets:		
Cash	$ 5,300	$ 3,900
Accounts Receivable	8,100	7,600
Long-term Assets:		
Plants Assets	105,350	88,250
Accumulated Depreciation—Plant Assets	(35,350)	(19,250)
Total Assets	**$ 83,400**	**$ 80,500**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 7,000	$ 5,500
Long-term Liabilities:		
Notes Payable	11,000	16,000
Total Liabilities	18,000	21,500
Stockholders' Equity		
Common Stock, no par	28,000	23,000
Retained Earnings	37,400	36,000
Total Stockholders' Equity	65,400	59,000
Total Liabilities and Stockholders' Equity	**$ 83,400**	**$ 80,500**

Requirements

1. Compute the acquisition of plant assets for Kyler Media Corporation during 2016. The business sold no plant assets during the year. Assume the company paid cash for the acquisition of plant assets.
2. Compute the payment of a long-term note payable. During the year, the business issued a $4,400 note payable.

Note: Short Exercise S14-7 must be completed before attempting Short Exercise S14-8.

Learning Objective 2

S14-8 Preparing the statement of cash flows—indirect method

Use the Stenback Media Corporation data in Short Exercise S14-7 and the results you calculated from the requirements. Prepare Stenbeck Media's statement of cash flows—indirect method—for the year ended December 31, 2016.

Learning Objective 2

S14-9 Computing the change in cash; identifying non-cash transactions

Brianna's Wedding Shops earned net income of $25,000, which included depreciation of $16,000. Brianna's acquired a $116,000 building by borrowing $116,000 on a long-term note payable.

Requirements

1. How much did Brianna's cash balance increase or decrease during the year?
2. Were there any non-cash transactions for the company? If so, show how they would be reported in the statement of cash flows.

Learning Objective 3

S14-10 Computing free cash flow

Shauna Lopez Company expects the following for 2016:

- Net cash provided by operating activities of $144,000.
- Net cash provided by financing activities of $60,000.
- Net cash used for investing activities of $84,000 (no sales of long-term assets).
- Cash dividends paid to stockholders of $10,000.

How much free cash flow does Lopez expect for 2016?

Learning Objective 4
Appendix 14A

S14A-11 Preparing a statement of cash flows using the direct method

Green Bean, Inc. began 2016 with cash of $57,000. During the year, Green Bean earned revenue of $596,000 and collected $618,000 from customers. Expenses for the year totaled $433,000, of which Green Bean paid $214,000 in cash to suppliers and $209,000 in cash to employees. Green Bean also paid $146,000 to purchase equipment and a cash dividend of $56,000 to its stockholders during 2016. Prepare the company's statement of cash flows for the year ended December 31, 2016. Format operating activities by the direct method.

Learning Objective 4
Appendix 14A

S14A-12 Preparing operating activities using the direct method

Miss Ella's Learning Center has assembled the following data for the year ended June 30, 2016:

Payments to suppliers	$ 118,000
Cash payment for purchase of equipment	38,000
Payments to employees	67,000
Payment of notes payable	26,000
Payment of dividends	6,500
Cash receipt from issuance of stock	15,000
Collections from customers	184,000
Cash receipt from sale of land	60,000
Cash balance, June 30, 2015	39,000

Prepare the *operating* activities section of the business's statement of cash flows for the year ended June 30, 2016, using the direct method.

Note: Short Exercise S14A-12 must be completed before attempting Short Exercise S14A-13.

S14A-13 Preparing the direct method statement of cash flows

Learning Objective 4
Appendix 14A

Use the data in Short Exercise S14A-12 and your results. Prepare the business's complete statement of cash flows for the year ended June 30, 2016, using the *direct* method for operating activities.

S14A-14 Preparing the direct method statement of cash flows

Learning Objective 4
Appendix 14A

White Toy Company reported the following comparative balance sheet:

WHITE TOY COMPANY
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Current Assets:		
Cash	$ 17,000	$ 15,000
Accounts Receivable	58,000	47,000
Merchandise Inventory	75,000	87,000
Prepaid Expenses	2,500	1,500
Long-term Assets:		
Plants Assets, Net	228,000	183,000
Investments	79,000	90,000
Total Assets	**$ 459,500**	**$ 423,500**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 45,000	$ 41,000
Salaries Payable	21,500	19,000
Accrued Liabilities	5,000	15,000
Long-term Liabilities:		
Notes Payable	66,000	70,000
Total Liabilities	137,500	145,000
Stockholders' Equity		
Common Stock, no par	41,000	37,000
Retained Earnings	281,000	241,500
Total Stockholders' Equity	322,000	278,500
Total Liabilities and Stockholders' Equity	**$ 459,500**	**$ 423,500**

Requirements

1. Compute the collections from customers during 2016 for White Toy Company. Sales Revenue totaled $136,000.
2. Compute the payments for inventory during 2016. Cost of Goods Sold was $80,000.

Learning Objective 5
Appendix 14B

S14B-15 Using a spreadsheet to complete the statement of cash flows—indirect method

Companies can use a spreadsheet to complete the statement of cash flows. Each item that follows is recorded in the transaction analysis columns of the spreadsheet.

a. Net income

b. Increases in current assets (other than Cash)

c. Decreases in current liabilities

d. Cash payment for acquisition of plant assets

e. Cash receipt from issuance of common stock

f. Depreciation expense

Identify each as being recorded by a Debit or Credit in the *statement of cash flows section* of the spreadsheet.

> Exercises

Learning Objective 1

E14-16 Classifying cash flow items

Consider the following transactions:

a. Purchased equipment for $130,000 cash.

b. Issued $14 par preferred stock for cash.

c. Cash received from sales to customers of $35,000.

d. Cash paid to vendors, $17,000.

e. Sold building for $19,000 gain for cash.

f. Purchased treasury stock for $28,000.

g. Retired a notes payable with 1,250 shares of the company's common stock.

Identify the category of the statement of cash flows in which each transaction would be reported.

E14-17 Classifying transactions on the statement of cash flows—indirect method

Learning Objective 1

Consider the following transactions:

Date	Accounts and Explanation	Debit	Credit
a.	Cash	72,000	
	Common Stock		72,000
b.	Treasury Stock	16,500	
	Cash		16,500
c.	Cash	88,000	
	Sales Revenue		88,000
d.	Land	103,000	
	Cash		103,000
e.	Depreciation Expense—Equipment	6,800	
	Accumulated Depreciation—Equipment		6,800
f.	Dividends Payable	19,500	
	Cash		19,500
g.	Land	22,000	
	Notes Payable		22,000
h.	Cash	9,600	
	Equipment		9,600
i.	Bonds Payable	51,000	
	Cash		51,000
j.	Building	137,000	
	Notes Payable		137,000
k.	Loss on Disposal of Equipment	1,800	
	Accumulated Depreciation—Equipment	200	
	Equipment		2,000

Identify the category of the statement of cash flows in which each transaction would be reported.

E14-18 Classifying items on the indirect statement of cash flows

Learning Objectives 1, 2

The statement of cash flows categorizes like transactions for optimal reporting.

Identify each item as a(n):

- Operating activity—addition to net income (O+) or subtraction from net income (O–)
- Investing activity—cash inflow (I+) or cash outflow (I–)
- Financing activity—cash inflow (F+) or cash outflow (F–)
- Non-cash investing and financing activity (NIF)
- Activity that is not used to prepare the indirect statement of cash flows (N)

The *indirect* method is used to report cash flows from operating activities.

- **a.** Loss on sale of land.
- **b.** Acquisition of equipment by issuance of note payable.
- **c.** Payment of long-term debt.
- **d.** Acquisition of building by issuance of common stock.
- **e.** Increase in Salaries Payable.
- **f.** Decrease in Merchandise Inventory.
- **g.** Increase in Prepaid Expenses.
- **h.** Decrease in Accrued Liabilities.
- **i.** Cash sale of land.
- **j.** Issuance of long-term note payable to borrow cash.
- **k.** Depreciation Expense.
- **l.** Purchase of treasury stock.
- **m.** Issuance of common stock.
- **n.** Increase in Accounts Payable.
- **o.** Net income.
- **p.** Payment of cash dividend.

Learning Objective 2

Net Cash Prov. by Op. Act. $17,000

E14-19 Computing operating activities cash flow—indirect method

The records of Paramount Color Engraving reveal the following:

Net income	$ 40,000	Depreciation expense	$ 11,000
Sales revenue	47,000	Decrease in current liabilities	24,000
Loss on sale of land	5,000	Increase in current assets other than cash	15,000
Acquisition of land	39,000		

Compute cash flows from operating activities by the indirect method for year ended December 31, 2016.

Learning Objective 2

Net Cash Prov. by Op. Act. $71,500

E14-20 Computing operating activities cash flow—indirect method

The accounting records of CD Sales, Inc. include the following accounts:

Account	Beginning Balance	Ending Balance
Cash	$ 7,000	$ 5,500
Accounts Receivable	21,000	17,000
Merchandise Inventory	19,000	33,000
Accounts Payable	15,000	20,500

Accumulated Depreciation—Equipment

		56,000	Jul. 1
		3,500	Depr. Exp.
		59,500	Jul. 31

Retained Earnings

		67,000	Jul. 1
Dividends	18,000	81,000	Net Inc.
		130,000	Jul. 31

Compute CO's net cash provided by (used for) operating activities during July 2016. Use the indirect method.

Learning Objective 2

Net Cash Prov. by Op. Act. $99,000

E14-21 Preparing the statement of cash flows—indirect method

The income statement and additional data of Daily Plus, Inc. follows:

DAILY PLUS, INC.
Income Statement
Year Ended September 30, 2016

Sales Revenue		$ 240,000
Cost of Goods Sold		95,000
Gross Profit		145,000
Operating Expenses:		
Salaries Expense	$ 52,000	
Depreciation Expense—Plant Assets	24,000	
Total Operating Expenses		76,000
Net Income Before Income Taxes		69,000
Income Tax Expense		5,000
Net Income		**$ 64,000**

Additional data follow:

a. Acquisition of plant assets is $121,000. Of this amount, $106,000 is paid in cash and $15,000 by signing a note payable.

b. Cash receipt from sale of land totals $25,000. There was no gain or loss.

c. Cash receipts from issuance of common stock total $27,000.

d. Payment of note payable is $14,000.

e. Payment of dividends is $11,000.

f. From the balance sheet:

	September 30	
	2016	**2015**
Cash	$ 34,000	$ 11,000
Accounts Receivable	43,000	57,000
Merchandise Inventory	95,000	91,000
Plant Assets	171,000	50,000
Accumulated Depreciation	(56,000)	(32,000)
Land	62,000	87,000
Accounts Payable	35,000	22,000
Accrued Liabilities	19,000	28,000
Notes Payable (long-term)	15,000	14,000
Common Stock, no par	33,000	6,000
Retained Earnings	247,000	194,000

Prepare Daily Plus's statement of cash flows for the year ended September 30, 2016, using the indirect method. Include a separate section for non-cash investing and financing activities.

Learning Objective 2

2. Book Value on Plant Assets Sold $10,000

E14-22 Computing cash flows for investing and financing activities

Consider the following facts for Java Jolt:

a. Beginning and ending Retained Earnings are $41,000 and $71,000, respectively. Net income for the period is $62,000.

b. Beginning and ending Plant Assets are $121,200 and $125,200, respectively.

c. Beginning and ending Accumulated Depreciation—Plant Assets are $20,200 and $21,200, respectively.

d. Depreciation Expense for the period is $18,000, and acquisitions of new plant assets total $23,000. Plant assets were sold at a $3,000 gain.

Requirements

1. How much are cash dividends?
2. What was the amount of the cash receipt from the sale of plant assets?

Learning Objective 2

2. Payment: $6,000
4. Dividends $32,000

E14-23 Computing the cash effect

Steinmar Exercise Equipment, Inc. reported the following financial statements for 2016:

STEINMAR EXERCISE EQUIPMENT, INC.
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 715,000
Cost of Goods Sold		349,000
Gross Profit		366,000
Operating Expenses:		
Depreciation Expense	$ 54,000	
Other Operating Expenses	195,000	
Total Operating Expenses		249,000
Net Income		**$ 117,000**

STEINMAR EXERCISE EQUIPMENT, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Current Assets:		
Cash	$ 22,000	$ 19,000
Accounts Receivable	50,000	46,000
Merchandise Inventory	83,000	86,000
Long-term Assets:		
Plants Assets	275,400	222,800
Accumulated Depreciation—Plant Assets	(48,400)	(37,800)
Investments	91,000	77,000
Total Assets	**$ 473,000**	**$ 413,000**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 79,000	$ 75,000
Salaries Payable	3,000	5,000
Long-term Liabilities:		
Notes Payable	63,000	70,000
Total Liabilities	145,000	150,000
Stockholders' Equity		
Common Stock, no par	49,000	36,000
Retained Earnings	279,000	227,000
Total Stockholders' Equity	328,000	263,000
Total Liabilities and Stockholders' Equity	**$ 473,000**	**$ 413,000**

Requirements

1. Compute the amount of Steinmar Exercise's acquisition of plant assets. Assume the acquisition was for cash. Steinmar Exercise disposed of plant assets at book value. The cost and accumulated depreciation of the disposed asset was $43,400. No cash was received upon disposal.
2. Compute new borrowing or payment of long-term notes payable, with Steinmar Exercise having only one long-term note payable transaction during the year.
3. Compute the issuance of common stock with Steinmar Exercise having only one common stock transaction during the year.
4. Compute the payment of cash dividends.

Note: Exercise E14-23 must be completed before attempting Exercise E14-24.

E14-24 Preparing the statement of cash flows—indirect method

Learning Objective 2

Net Cash Prov. by Op. Act. $150,000

Use the Stenback Exercise Equipment data in Exercise E14-23. Prepare the company's statement of cash flows—indirect method—for the year ended December 31, 2016. Assume investments are purchased with cash.

Learning Objective 2

Total Non-cash Inv. and Fin. Act. $161,000

E14-25 Identifying and reporting non-cash transactions

Motorcross, Inc. identified the following selected transactions that occurred during 2016:

a. Issued 850 shares of $5 par common stock for cash of $21,000.

b. Issued 5,600 shares of $5 par common stock for a building with a fair market value of $99,000.

c. Purchased new truck with a fair market value of $36,000. Financed it 100% with a long-term note.

d. Retired short-term notes of $26,000 by issuing 2,500 shares of $5 par common stock.

e. Paid long-term note of $8,500 to Bank of Tallahassee. Issued new long-term note of $17,000 to Bank of Trust.

Identify any non-cash transactions that occurred during the year, and show how they would be reported in the non-cash investing and financing activities section of the statement of cash flows.

Learning Objective 3

E14-26 Analyzing free cash flow

Juda Exercise Equipment, Inc. reported the following statement of cash flows for 2016: Juda plans to purchase a truck for $26,000 and a forklift for $127,000 next year. In addition, it plans to pay cash dividends of $3,500. Assuming Juda plans similar activity for 2017, what would be the amount of free cash flow?

Learning Objective 4
Appendix 14A

Net Cash Prov. by Op. Act. $1,000

E14A-27 Preparing operating activities cash flow—direct method

The accounting records of Grand Auto Parts reveal the following:

Payment of salaries and wages	$ 33,000	Net income	$ 24,000
Depreciation expense	13,000	Payment of income tax	15,000
Payment of interest	14,000	Collection of dividend revenue	7,000
Payment of dividends	7,000	Payment to suppliers	57,000
Collections from customers	113,000		

Compute cash flows from operating activities using the *direct* method for the year ended December 31, 2016.

E14A-28 Preparing the statement of cash flows—direct method

Learning Objective 4
Appendix 14A

Net Cash Prov. by Op. Act. $77,000

The income statement and additional data of Rolling Hills Corporation follow:

ROLLING HILLS CORPORATION
Income Statement
Year Ended June 30, 2016

Sales Revenue		$ 229,000
Cost of Goods Sold		107,000
Gross Profit		122,000
Operating Expenses:		
Salaries Expense	$ 46,000	
Depreciation Expense—Plant Assets	28,000	
Advertising Expense	11,000	
Total Operating Expenses		85,000
Operating Income		37,000
Other Revenues and (Expenses):		
Dividend Revenue	10,500	
Interest Expense	(3,000)	
Total Other Revenues and (Expenses)		7,500
Net Income Before Income Taxes		44,500
Income Tax Expense		8,000
Net Income		**$ 36,500**

a. Collections from customers are $14,000 more than sales.

b. Dividend revenue, interest expense, and income tax expense equal their cash amounts.

c. Payments to suppliers are the sum of cost of goods sold plus advertising expense.

d. Payments to employees are $1,500 more than salaries expense.

e. Cash payment for the acquisition of plant assets is $108,000.

f. Cash receipts from sale of land total $25,000.

g. Cash receipts from issuance of common stock total $31,000.

h. Payment of long-term notes payable is $17,000.

i. Payment of dividends is $12,000.

j. Cash balance at June 30, 2015, was $28,000; at June 30, 2016, it was $24,000.

Prepare Rolling Hills Corporation's statement of cash flows for the year ended June 30, 2016. Use the *direct* method.

E14A-29 Computing cash flow items—direct method

Learning Objective 4
Appendix 14A

1. Cash Receipts from Cust. $66,000

Consider the following facts:

a. Beginning and ending Accounts Receivable are $25,000 and $27,000, respectively. Credit sales for the period total $68,000.

b. Cost of goods sold is $81,000.

c. Beginning Merchandise Inventory balance is $25,000, and ending Merchandise Inventory balance is $26,000.

d. Beginning and ending Accounts Payable are $13,000 and $10,000, respectively.

Requirements

1. Compute cash collections from customers.
2. Compute cash payments for merchandise inventory.

Learning Objective 4
Appendix 14A

2. Cash Paid for Merchandise Inventory $18,482
7. Dividends $213

E14A-30 Computing cash flow items—direct method

Elite Mobile Homes reported the following in its financial statements for the year ended December 31, 2016:

	2016	2015
Income Statement		
Net Sales	$ 24,691	$ 21,555
Cost of Goods Sold	18,015	15,458
Depreciation Expense	273	229
Other Operating Expenses	4,427	4,221
Income Tax Expense	533	489
Net Income	$ 1,443	$ 1,158
Balance Sheet		
Cash	$ 15	$ 11
Accounts Receivable	795	612
Merchandise Inventory	3,485	2,833
Property and Equipment, net	4,367	3,457
Accounts Payable	1,543	1,358
Accrued Liabilities	936	847
Long-term Liabilities	478	463
Common Stock, no par	675	445
Retained Earnings	5,030	3,800

Requirements

1. Compute the collections from customers.
2. Compute payments for merchandise inventory.
3. Compute payments of operating expenses.
4. Compute the acquisitions of property and equipment (no sales of property during 2016).
5. Compute the amount of borrowing, with Elite paying no long-term liabilities.
6. Compute the cash receipt from issuance of common stock.
7. Compute the payment of cash dividends.

Learning Objective 5
Appendix 14B

E14B-31 Using a spreadsheet to prepare the statement of cash flows—indirect method

Use the Supplements Plus, Inc. data in Exercise E14-21 to prepare the spreadsheet for the 2016 statement of cash flows. Format cash flows from operating activities by the indirect method.

> Problems Group A

P14-32A Identifying the purpose and preparing the statement of cash flows—indirect method

Learning Objectives 1, 2

2. Net Income $67,700
4. Net Cash Used by Op. Act. $(61,250)

North American Reserve Rare Coins (NARRC) was formed on January 1, 2016. Additional data for the year follow:

a. On January 1, 2016, NARRC issued no par common stock for $450,000.

b. Early in January, NARRC made the following cash payments:
   1. For store fixtures, $51,000
   2. For merchandise inventory, $310,000
   3. For rent expense on a store building, $21,000

c. Later in the year, NARRC purchased merchandise inventory on account for $240,000. Before year $140,000 of this account payable.

d. During 2016, NARRC sold 3,100 units of merchandise inventory for $200 each. Before year-end 80% of this amount. Cost of goods sold for the year was $270,000, and ending merchandise.

e. The store employs three people. The combined annual payroll is $86,000, of which NARRC

f. At the end of the year, NARRC paid income tax of $23,000. There are no income taxes payable

g. Late in 2016, NARRC paid cash dividends of $40,000.

h. For store fixtures, NARRC uses the straight-line depreciation method, over five years, with zero

Requirements

1. What is the purpose of the statement of cash flows?
2. Prepare NARRC's income statement for the year ended December 31, 2016. Use the single-revenues listed together and all expenses listed together.
3. Prepare NARRC's balance sheet at December 31, 2016.
4. Prepare NARRC's statement of cash flows using the indirect method for the year ended December.

P14-33A Preparing the statement of cash flows—indirect method

Learning Objective 2

Net Cash Used for Inv. Act. $(16,000)

Accountants for Morgensen, Inc. have assembled the following data for the year ended December 31, 2016:

	2016	2015
Current Assets:		
Cash	$ 104,900	$ 24,000
Accounts Receivable	64,500	69,400
Merchandise Inventory	80,000	76,000
Current Liabilities:		
Accounts Payable	$ 58,200	$ 56,300
Income Tax Payable	14,200	16,500

Transaction Data for 2016:			
Issuance of common stock for cash	$ 39,000	Payment of notes payable	$ 48,100
Depreciation expense	19,000	Payment of cash dividends	48,000
Purchase of equipment with cash	75,000	Issuance of notes payable to borrow cash	64,000
Acquisition of land by issuing long-term notes payable	116,000	Gain on sale of building	14,500
Book value of building sold	57,000	Net income	72,500

Prepare Morgensen's statement of cash flows using the indirect method. Include an accompanying schedule of non-cash investing and financing activities.

Learning Objective 2

1. Net Cash Prov. by Op. Act. $132,700

P14-34A Preparing the statement of cash flows—indirect method with non-cash transactions

The 2016 income statement and comparative balance sheet of Rolling Hills, Inc. follow:

ROLLING HILLS, INC.
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 442,000
Cost of Goods Sold		208,200
Gross Profit		233,800
Operating Expenses:		
Salaries Expense	$ 74,400	
Depreciation Expense—Plant Assets	15,000	
Other Operating Expenses	10,800	
Total Operating Expenses		100,200
Operating Income		133,600
Other Revenues and (Expenses):		
Interest Revenue	8,100	
Interest Expense	(21,500)	
Total Other Revenues and (Expenses)		(13,400)
Net Income Before Income Taxes		120,200
Income Tax Expense		19,400
Net Income		**$ 100,800**

ROLLING HILLS, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Current Assets:		
Cash	$ 26,200	$ 14,900
Accounts Receivable	26,400	25,000
Merchandise Inventory	79,100	91,500
Long-term Assets:		
Plant Assets	121,780	111,150
Accumulated Depreciation—Plant Assets	(18,880)	(15,450)
Land	34,400	13,000
Total Assets	**$ 269,000**	**$ 240,100**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 34,900	$ 30,800
Accrued Liabilities	27,900	30,900
Long-term Liabilities:		
Notes Payable	78,000	105,000
Total Liabilities	140,800	166,700
Stockholders' Equity		
Common Stock, no par	88,900	64,900
Retained Earnings	39,300	8,500
Total Stockholders' Equity	128,200	73,400
Total Liabilities and Stockholders' Equity	**$ 269,000**	**$ 240,100**

Additionally, Rolling Hills purchased land of $21,400 by financing it 100% with long-term notes payable during 2016. During the year, there were no sales of land, no retirements of stock, and no treasury stock transactions. A plant asset was disposed of for $0. The cost and accumulated depreciation of the disposed asset was $11 ,570. The plant acquisition was for cash.

Requirements

1. Prepare the 2016 statement of cash flows, formatting operating activities by the *indirect* method.
2. How will what you learned in this problem help you evaluate an investment?

Learning Objectives 2, 3

1. Net Cash Used for Inv. Act. $(157,100)

P14-35A Preparing the statement of cash flows—indirect method, evaluating cash flows, and measuring free cash flows

The comparative balance sheet of Morgen sen Educational Supply at December 31, 2016, reported the following:

	2016	2015
Current Assets:		
Cash	$ 88,900	$ 24,500
Accounts Receivable	14,400	21,800
Merchandise Inventory	63,000	60,200
Current Liabilities:		
Accounts Payable	$ 27,600	$ 26,600
Accrued Liabilities	10,100	11,600

Morgensen's transactions during 2016 included the following:

Payment of cash dividends	$ 18,200	Depreciation expense	$ 17,500
Purchase of equipment with cash	54,400	Purchase of building with cash	105,000
Issuance of long-term notes payable to borrow cash	50,000	Net income	61,600
Issuance of common stock for cash	109,000		

Requirements

1. Prepare the statement of cash flows of Morgensen Educational Supply for the year ended December indirect method to report cash flows from operating activities.
2. Evaluate Morgensen's cash flows for the year. Mention all three categories of cash flows, and evaluation.
3. If Morgensen plans similar activity for 2017, what is its expected free cash flow?

Learning Objective 4
Appendix 14A

2. Total Assets $1,177,800
3. Net Cash Prov. by Op. Act. $356,500

P14A-36A Preparing the statement of cash flows—direct method

Frontier Rare Coins (FRC) was formed on January 1, 2016. Additional data for the year follow:

a. On January 1, 2016, FRC issued no par common stock for $500,000.

b. Early in January, FRC made the following cash payments:
   1. For store fixtures, $51,000
   2. For merchandise inventory, $300,000
   3. For rent expense on the store building, $16,000

c. Later in the year, FRC purchased merchandise inventory on account for $239,000. Before year-end, FRC paid $139,000 of this accounts payable.

d. During 2016, FRC sold 2,900 units of merchandise inventory for $350 each. Before year-end, the company collected 90% of this amount. Cost of goods sold for the year was $270,000, and ending merchandise inventory totaled $269,000.

e. The store employs three people. The combined annual payroll is $84,000, of which FRC still owes $2,000 at year-end.

f. At the end of the year, FRC paid income tax of $20,000. There are no income taxes payable.

g. Late in 2016, FRC paid cash dividends of $39,000.

h. For store fixtures, FRC uses the straight-line depreciation method, over five years, with zero residual value.

Requirements

1. Prepare FRC's income statement for the year ended December 31, 2016. Use the single-step format, with all revenues listed together and all expenses listed together.
2. Prepare FRC's balance sheet at December 31, 2016.
3. Prepare FRC's statement of cash flows for the year ended December 31, 2016. Format cash flows from operating activities by the direct method.

P14A-37A Preparing the statement of cash flows—direct method

Learning Objective 4
Appendix 14A

1. Net Cash Prov. by Op. Act. $132,700
Collections from Cust. $439,500

Use the McKnight, Inc. data from Problem P14-34A.

Requirements

1. Prepare the 2016 statement of cash flows by the direct method.
2. How will what you learned in this problem help you evaluate an investment?

P14B-38A Using a spreadsheet to prepare the statement of cash flows—indirect method

Learning Objective 5
Appendix 14B

Cash Pmt. of Div. $28,400
Cash Pmt. for Acq. of Land $25,600

The 2016 comparative balance sheet and income statement of Allentown Group, Inc. follow. Allentown disposed of a plant asset at book value during 2016.

ALLENTOWN GROUP, INC.
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 439,000
Cost of Goods Sold		205,300
Gross Profit		233,700
Operating Expenses:		
Salaries Expense	$ 76,600	
Depreciation Expense—Plant Assets	15,600	
Other Operating Expenses	49,800	
Total Operating Expenses		142,000
Operating Income		91,700
Other Revenues and (Expenses):		
Interest Revenue	11,700	
Interest Expense	(24,500)	
Total Other Revenues and (Expenses)		(12,800)
Net Income Before Income Taxes		78,900
Income Tax Expense		16,400
Net Income		**$ 62,500**

ALLENTOWN GROUP, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Current Assets:		
Cash	$ 9,000	$ 15,100
Accounts Receivable	42,300	43,300
Merchandise Inventory	97,200	93,400
Long-term Assets:		
Plant Assets	121,540	111,140
Accumulated Depreciation—Plant Assets	(20,240)	(16,840)
Land	37,600	12,000
Total Assets	**$ 287,400**	**$ 258,100**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 24,800	$ 26,400
Accrued Liabilities	23,300	22,100
Long-term Liabilities:		
Notes Payable	54,000	67,000
Total Liabilities	102,100	115,500
Stockholders' Equity		
Common Stock, no par	131,300	122,700
Retained Earnings	54,000	19,900
Total Stockholders' Equity	185,300	142,600
Total Liabilities and Stockholders' Equity	**$ 287,400**	**$ 258,100**

Prepare the spreadsheet for the 2016 statement of cash flows. Format cash flows from operating activities by the indirect method. A plant asset was disposed of for $0. The cost and accumulated depreciation of the disposed asset was $12,200. There were no sales of land, no retirement of common stock, and no treasury stock transactions. Assume plant asset and land acquisitions were for cash.

> Problems Group B

Learning Objectives 1, 2

2. Net Income $521,400
3. Total Assets $1,038,400
4. Net Cash Prov. by Op. Act. $376,000

P14-39B Identifying the purpose and preparing the statement of cash flows—indirect method

Frank Rare Coins (FRC) was formed on January 1, 2016. Additional data for the year follow:

a. On January 1, 2016, FRC issued no par common stock for $450,000.

b. Early in January, FRC made the following cash payments:
  1. For store fixtures, $48,000
  2. For merchandise inventory, $260,000
  3. For rent expense on a store building, $14,000

c. Later in the year, FRC purchased merchandise inventory on account for $237,000. Before year-end, FRC paid $137,000 of this accounts payable.

d. During 2016, FRC sold 2,500 units of merchandise inventory for $400 each. Before year-end, the company collected 90% of this amount. Cost of goods sold for the year was $340,000, and ending merchandise inventory totaled $157,000.

e. The store employs three people. The combined annual payroll is $92,000, of which FRC still owes $2,000 at year-end.

f. At the end of the year, FRC paid income tax of $23,000. There was no income taxes payable.

g. Late in 2016, FRC paid cash dividends of $35,000.

h. For store fixtures, FRC uses the straight-line depreciation method, over five years, with zero residual value.

Requirements

1. What is the purpose of the statement of cash flows?
2. Prepare FRC's income statement for the year ended December 31, 2016. Use the single-step format, with all revenues listed together and all expenses listed together.
3. Prepare FRC's balance sheet at December 31, 2016.
4. Prepare FRC's statement of cash flows using the indirect method for the year ended December 31, 2016.

P14-40B Preparing the statement of cash flows—indirect method

Learning Objective 2

Net Cash Prov. by Op. Act. $85,300

Accountants for Carlson, Inc. have assembled the following data for the year ended December 31, 2016:

	2016	2015
Current Assets:		
Cash	$ 89,200	$ 18,000
Accounts Receivable	64,600	68,800
Merchandise Inventory	85,000	77,000
Current Liabilities:		
Accounts Payable	$ 57,500	$ 55,400
Income Tax Payable	14,700	16,200

Transaction Data for 2016:			
Issuance of common stock for cash	$ 38,000	Payment of notes payable	$ 51,100
Depreciation expense	21,000	Payment of cash dividends	46,000
Purchase of equipment with cash	73,000	Issuance of notes payable to borrow cash	61,000
Acquisition of land by issuing long-term notes payable	122,000	Gain on sale of building	2,000
Book value of building sold	55,000	Net income	69,500

Prepare Carlson's statement of cash flows using the indirect method. Include an accompanying schedule of non-cash investing and financing activities.

Learning Objective 2

1. Net Cash Prov. by Op. Act. $132,000

P14-41B Preparing the statement of cash flows—indirect method with non-cash transactions

The 2016 income statement and comparative balance sheet of McDonald, Inc. follow:

MCDONALD, INC.
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 443,000
Cost of Goods Sold		203,200
Gross Profit		239,800
Operating Expenses:		
Salaries Expense	$ 78,400	
Depreciation Expense—Plant Assets	14,800	
Other Operating Expenses	10,300	
Total Operating Expenses		103,500
Operating Income		136,300
Other Revenues and (Expenses):		
Interest Revenue	8,300	
Interest Expense	(21,800)	
Total Other Revenues and (Expenses)		(13,500)
Net Income Before Income Taxes		122,800
Income Tax Expense		19,200
Net Income		**$ 103,600**

MCDONALD, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Current Assets:		
Cash	$ 26,200	$ 15,100
Accounts Receivable	26,500	25,700
Merchandise Inventory	79,800	91,800
Long-term Assets:		
Plant Assets	117,240	109,480
Accumulated Depreciation—Plant Assets	(21,340)	(19,780)
Land	34,500	14,000
Total Assets	**$ 262,900**	**$ 236,300**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 35,000	$ 30,000
Accrued Liabilities	28,300	30,900
Long-term Liabilities:		
Notes Payable	75,000	105,000
Total Liabilities	138,300	165,900
Stockholders' Equity		
Common Stock, no par	88,800	64,300
Retained Earnings	35,800	6,100
Total Stockholders' Equity	124,600	70,400
Total Liabilities and Stockholders' Equity	**$ 262,900**	**$ 236,300**

Additionally, McDonald purchased land of $20,500 by financing it 100% with long-term notes payable during 2016. During the year, there were no sales of land, no retirements of stock, and no treasury stock transactions. A plant asset was disposed of for $0. The cost and the accumulated depreciation of the disposed asset was $13,240. Plant asset was acquired for cash.

Requirements

1. Prepare the 2016 statement of cash flows, formatting operating activities by the *indirect* method.
2. How will what you learned in this problem help you evaluate an investment?

Learning Objectives 2, 3

1. Net Cash Used for Inv. Act. $(156,000)

P14-42B Preparing the statement of cash flows—indirect method, evaluating cash flows, and measuring free cash flows

The comparative balance sheet of Morris Educational Supply at December 31, 2016, reported the following:

	2016	2015
Current Assets:		
Cash	$ 90,600	$ 22,500
Accounts Receivable	15,100	21,600
Merchandise Inventory	63,800	58,600
Current Liabilities:		
Accounts Payable	$ 30,600	$ 29,100
Accrued Liabilities	10,500	11,800

Morris's transactions during 2016 included the following:

Payment of cash dividends	$ 17,200	Depreciation expense	$ 17,200
Purchase of equipment with cash	55,000	Purchase of building with cash	101,000
Issuance of long-term notes payable to borrow cash	50,000	Net income	64,600
Issuance of common stock for cash	108,000		

Requirements

1. Prepare the statement of cash flows of Morris Educational Supply for the year ended December 31, 2016. Use the indirect method to report cash flows from operating activities.
2. Evaluate Morris's cash flows for the year. Mention all three categories of cash flows, and give the reason for your evaluation.
3. If Morris plans similar activity for 2017, what is its expected free cash flow?

Learning Objective 4
Appendix 14A

1. Net Income $115,200
2. Total Assets $612,200
3. Collections from Cust. $464,000

P14A-43B Preparing the statement of cash flows—direct method

Official Reserve Rare Coins (ORRC) was formed on January 1, 2016. Additional data for the year follow:

a. On January 1, 2016, ORRC issued no par common stock for $450,000.

b. Early in January, ORRC made the following cash payments:
   1. For store fixtures, $49,000
   2. For merchandise inventory, $280,000
   3. For rent expense on a store building, $10,000

c. Later in the year, ORRC purchased merchandise inventory on account for $238,000. Before year-end, ORRC paid $158,000 of this accounts payable.

d. During 2016, ORRC sold 2,900 units of merchandise inventory for $200 each. Before year-end, the company collected 80% of this amount. Cost of goods sold for the year was $340,000, and ending merchandise inventory totaled $178,000.

e. The store employs three people. The combined annual payroll is $88,000, of which ORRC still owes $5,000 at year-end.

f. At the end of the year, ORRC paid income tax of $17,000. There was no income taxes payable.

g. Late in 2016, ORRC paid cash dividends of $38,000.

h. For store fixtures, ORRC uses the straight-line depreciation method, over five years, with zero residual value.

Requirements

1. Prepare ORRC's income statement for the year ended December 31, 2016. Use the single-step format, with all revenues listed together and all expenses listed together.
2. Prepare ORRC's balance sheet at December 31, 2016.
3. Prepare ORRC's statement of cash flows for the year ended December 31, 2016. Format cash flows from operating activities by the direct method.

P14A-44B Preparing the statement of cash flows—direct method

Learning Objective 4
Appendix 14A

1. Net Cash Prov. by Op. Act. $132,000
Collections from Cust. $442,200

Use the McDonald data from Problem P14-41B.

Requirements

1. Prepare the 2016 statement of cash flows by the direct method.
2. How will what you learned in this problem help you evaluate an investment?

P14B-45B Using a spreadsheet to prepare the statement of cash flows—indirect method

Learning Objective 5
Appendix 14B

Cash Pmt. of Div. $28,900
Cash Pmt. of N/P $17,000

The 2016 comparative balance sheet and income statement of Abilene Group, Inc. follow. Abilene disposed of a plant asset at book value in 2016.

ABILENE GROUP, INC.
Income Statement
Year Ended December 31, 2016

Sales Revenue		$ 442,000
Cost of Goods Sold		205,200
Gross Profit		236,800
Operating Expenses:		
Salaries Expense	$ 76,800	
Depreciation Expense	15,900	
Other Operating Expenses	49,600	
Total Operating Expenses		142,300
Operating Income		94,500
Other Revenues and (Expenses):		
Interest Revenue	11,300	
Interest Expense	(24,200)	
Total Other Revenues and (Expenses)		(12,900)
Net Income Before Income Taxes		81,600
Income Tax Expense		16,600
Net Income		**$ 65,000**

ABILENE GROUP, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Current Assets:		
Cash	$ 10,600	$ 15,700
Accounts Receivable	41,900	43,500
Merchandise Inventory	96,300	93,100
Long-term Assets:		
Plant Assets	121,860	112,060
Accumulated Depreciation—Plant Assets	(21,060)	(17,560)
Land	39,600	14,000
Total Assets	**$ 289,200**	**$ 260,800**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 25,100	$ 26,300
Accrued Liabilities	24,100	22,400
Long-term Liabilities:		
Notes Payable	44,000	61,000
Total Liabilities	93,200	109,700
Stockholders' Equity		
Common Stock, no par	140,400	131,600
Retained Earnings	55,600	19,500
Total Stockholders' Equity	196,000	151,100
Total Liabilities and Stockholders' Equity	**$ 289,200**	**$ 260,800**

Prepare the spreadsheet for the 2016 statement of cash flows. Format cash flows from operating activities by the indirect method. A plant asset was disposed of for $0. The cost and accumulated depreciation of the disposed asset was $12,400. There were no sales of land, no retirement of common stock, and no treasury stock transactions. Assume plant asset and land acquisitions were for cash.

> Continuing Problem

P14-46 Preparing the statement of cash flows—indirect method

This problem continues the Daniels Consulting situation from Problem P13-47 of Chapter 13. Daniels Consulting's comparative balance sheet is shown on the next page.

DANIELS CONSULTING
Comparative Balance Sheet
December 31, 2017 and 2016

	2017	2016
Assets		
Current Assets:		
Cash	$ 1,457,524	$ 31,700
Accounts Receivable	25,700	700
Office Supplies	2,150	50
Long-term Assets:		
Plants Assets	84,800	4,800
Accumulated Depreciation—Plant Assets	(1,696)	(80)
Total Assets	**$ 1,568,478**	**$ 37,170**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 7,300	$ 4,100
Salaries Payable	1,800	467
Unearned Revenue	0	1,600
Interest Payable	25,000	0
Long-term Liabilities:		
Notes Payable	500,000	0
Bonds Payable	900,000	0
Discount on Bonds Payable	(100,862)	0
Total Liabilities	1,333,238	6,167
Stockholders' Equity		
Common Stock, no par	115,240	240
Retained Earnings	120,000	30,763
Total Stockholders' Equity	235,240	31,003
Total Liabilities and Stockholders' Equity	**$ 1,568,478**	**$ 37,170**

Additional data follow:

- **a.** Depreciation expense for the year, $1,616.
- **b.** Daniels Consulting had no disposal of plant assets during the year. Plant assets were acquired for cash.
- **c.** Amortization of the discount on bonds payable for the year, $11,206.
- **d.** Daniels Consulting issued a bonds payable with a face value of $900,000, receiving cash of $787,932.
- **e.** Net income for the year was $190,537.
- **f.** Cash receipts from issuance of common stock totaled $115,000.

Prepare the statement of cash flows using the indirect method.

CRITICAL THINKING

> Decision Case 14-1

Theater by Design and Show Cinemas are asking you to recommend their stock to your clients. Because Theater by Design and Show Cinemas earn about the same net income and have similar financial positions, your decision depends on their statement of cash flows, summarized as follows:

	Theater by Design		Show Cinemas	
Net Cash Provided by Operating Activities		$ 30,000		$ 70,000
Cash Provided by (Used for) Investing Activities:				
Purchase of Plant Assets	$ (20,000)		$ (100,000)	
Sale of Plant Assets	40,000	20,000	10,000	(90,000)
Cash Provided by (Used for) Financing Activities:				
Issuance of common stock		0		30,000
Payment of long-term debt		(40,000)		0
Net Increase (Decrease) in Cash		$ 10,000		$ 10,000

Based on their cash flows, which company looks better? Give your reasons.

> Ethical Issue 14-1

Moss Exports is having a bad year. Net income is only $60,000. Also, two important overseas customers are falling behind in their payments to Moss, and Moss's accounts receivable are ballooning. The company desperately needs a loan. The Moss Exports Board of Directors is considering ways to put the best face on the company's financial statements. Moss's bank closely examines cash flow from operating activities. Daniel Peavey, Moss's controller, suggests reclassifying the receivables from the slow-paying clients as long-term. He explains to the board that removing the $80,000 increase in accounts receivable from current assets will increase net cash provided by operations. This approach may help Moss get the loan.

Requirements

1. Using only the amounts given, compute net cash provided by operations, both without and with the reclassification of the receivables. Which reporting makes Moss look better?
2. Under what condition would the reclassification of the receivables be ethical? Unethical?

> Financial Statement Case 14-1

Details about a company's cash flows appear in a number of places in the annual report. Use **Starbucks Corporation's** Fiscal 2013 Annual Report to answer the following questions. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to Starbucks Corporation's Fiscal 2013 Annual Report.

Requirements

1. Which method does Starbucks use to report net cash flows from *operating* activities? How can you tell?
2. Starbucks earned net income during 2013. Did operations *provide* cash or *use* cash during 2013? Give the amount. How did operating cash during 2013 compare with 2012?
3. For the year ended September 29, 2013, did Starbucks pay cash dividends? If so, how much?
4. For the year ended September 29, 2013, did Starbucks use cash to purchase property, plant, and equipment? If so, how much?

> Quick Check Answers

1. d **2.** d **3.** b **4.** a **5.** d **6.** c **7.** c **8.** c **9A.** d **10B.** a

15

Financial Statement Analysis

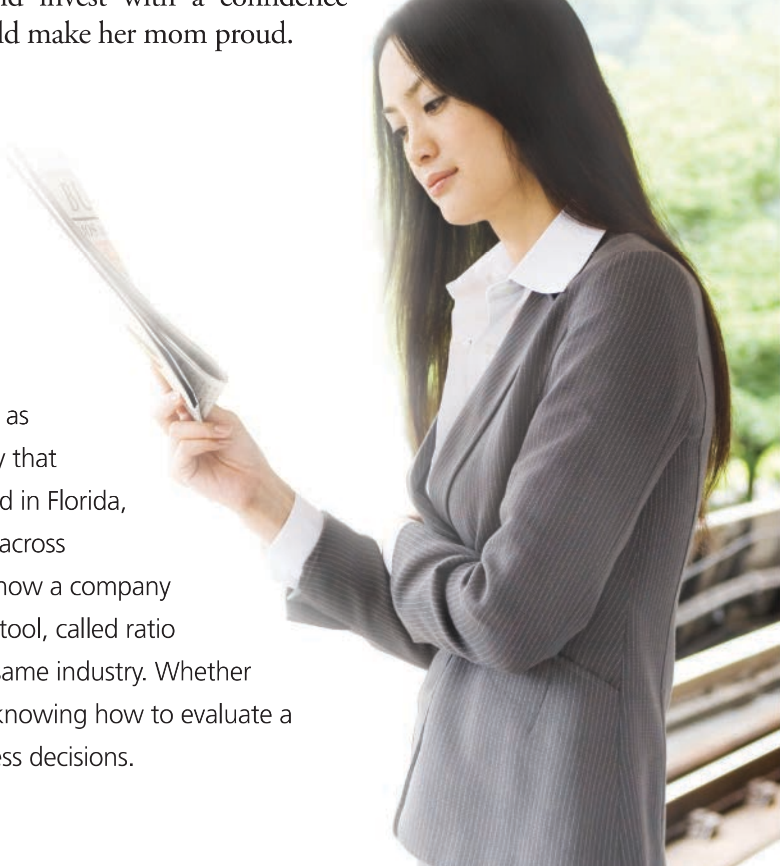
What Companies Should I Invest In?

Clara Salerno misses her mom, Sylvia, a lot these days. Her mom always knew just the right words to say when Clara came to visit after a long hard day at work, and her mom's chocolate cookies always worked magic in making her feel better. Since her mom passed away six months ago, Clara has had to make a lot of decisions on her own. As executor of her mom's estate, she was responsible for helping the accountant and attorney finalize the financial details and the estate paperwork. Clara knew that once the estate was settled, she would be receiving a large amount of cash. She knew that deciding what to do with the cash would be a very important decision.

When Clara met with her financial planner, she shared her goals of paying off her student loans and other personal debt and then saving toward her retirement. She wanted to take the cash remaining after paying off her debts and invest it in the stock market. Clara was worried, though. She tried to stay current on the financial markets by reading the business section of the newspaper and listening to the financial news, but she wasn't sure how to decide which companies would be the best investment choices. Clara's financial planner advised her that there are a number of tools that she could use to evaluate companies and determine which company is more profitable. Other tools will be helpful in helping her determine trends across a period of time. Clara knew that with help from her financial planner and these tools she could make sense out of companies' financial statements and invest with a confidence that would make her mom proud.

What Are the Tools That Help Users Analyze a Business?

In this chapter, you learn about tools that allow users to see beyond the pure numbers on the financial statements and translate them into meaningful analysis. So far you have learned some of what it takes to prepare financial statements; now you will learn how to use financial statements to help manage a company effectively, make wise investments, and compare one company to another. Certified financial planners who work for companies, such as Raymond James Financial, Inc., a financial services holding company that operates a full-service brokerage and investment firm headquartered in Florida, analyze financial statements to compare a company's performance across several periods of time. This comparison helps investors determine how a company is performing over time. In addition, financial planners use another tool, called ratio analysis, to measure one company against other companies in the same industry. Whether you will be an investor, an employee, or a manager of a company, knowing how to evaluate a company's performance accurately will help you make smart business decisions.



Chapter 15 Learning Objectives

1. Explain how financial statements are used to analyze a business
2. Perform a horizontal analysis of financial statements
3. Perform a vertical analysis of financial statements
4. Compute and evaluate the standard financial ratios
5. Complete a corporate income statement including earnings per share (Appendix 15A)

HOW ARE FINANCIAL STATEMENTS USED TO ANALYZE A BUSINESS?

Learning Objective 1
Explain how financial statements are used to analyze a business

In this chapter, we use what you have learned about financial statements to analyze Smart Touch Learning. We will determine if it was profitable, as well as its overall financial health.

Purpose of Analysis

Investors and creditors cannot evaluate a company by examining only one year's data. That is why most financial statements cover at least two periods. In fact, most financial analyses cover trends over three to five years. This chapter shows you how to use some of the analytical tools for charting a company's progress through time. These tools can be used by small business owners to measure performance, by financial analysts to analyze stock investments, by auditors to obtain an overall sense of a company's financial health, by creditors to determine credit risk, or by any other person wanting to compare financial data in relevant terms.

To accurately determine the financial performance of a company, such as Smart Touch Learning, we need to compare its performance in the following ways:

- from year to year
- with a competing company
- with the same industry as a whole

After this comparison, we will have a better idea of how to judge the company's present situation and predict what might happen in the near future.

Tools of Analysis

There are three main ways to analyze financial statements:

- Horizontal analysis provides a year-to-year comparison of a company's performance in different periods.
- Vertical analysis provides a way to compare different companies.
- Ratio analysis can be used to provide information about a company's performance. It is used most effectively to measure a company against other companies in the same industry and to denote trends within the company.

Corporate Financial Reports

Before we discuss the different tools available for financial statement analysis, let's review corporate financial reports.

Annual Reports

Annual Report
Provides information about a company's financial condition.

Publicly traded corporations have their stock listed on public stock exchanges, such as the New York Stock Exchange or the NASDAQ. They are required by the Securities and Exchange Commission (SEC) to file annual and quarterly reports (also called a *Form 10-K* and *Form 10-Q*). An **annual report** provides information about a company's financial condition. These reports help investors make informed investment decisions. A typical annual report begins with an overview of the business—including the industry the company is in, its growth strategy, and an overview of the company's brands. It also often discusses the company's competitors and the risks related to the company's business.

Management's Discussion and Analysis of Financial Condition and Results of Operations

Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A)
The section of the annual report that is intended to help investors understand the results of operations and the financial condition of the company.

Another part of the annual report is **management's discussion and analysis of financial condition and results of operations (MD&A)**. This section of the annual report is intended to help investors understand the results of operations and the financial condition of the company. It is important to realize that this section is written by the company and could present a biased view of the company's financial condition and results. This section of the report is the company's attempt to explain its financial statements and to discuss its performance.

The MD&A section is of interest to investors, though, because it often contains information that is not found in the financial data. Such information might include how a company is planning to spend its cash during the next year for property, plant, and equipment or whether significant changes are expected to occur that would cause revenue or expenses to increase or decrease in the future. This section often provides forward-looking information that can be useful to investors who are trying to estimate what future earnings will be for the company.

Report of Independent Registered Public Accounting Firm

A report of the independent registered public accounting firm (often referred to as the *auditor's report*) is included in an annual report. The audit report attests to the fairness of the presentation of the financial statements and states whether the financial statements are presented in accordance with Generally Accepted Accounting Principles (GAAP). This report is prepared by an independent external auditor who has performed an audit on the financial statements. In addition, the external auditor is responsible for assessing the effectiveness of the company's internal controls.

Most audit reports have *unqualified opinions*, which means that the financial statements are presented fairly, in all material respects. A *qualified opinion* might be issued if the financial statements include a departure from GAAP. If the auditor finds that the financial statements are not represented fairly, an *adverse opinion* would be given.

DECISIONS

Should an unqualified opinion be issued?

Patty Schneider was performing the independent audit for Drake Storage, Inc. Patty was reviewing the work that her staff auditors had completed, and she had several concerns about the company's financial statements. Patty's staff had determined that Drake had underreported its cost of goods sold in order to overstate net income. Patty had spoken to Drake Storage's audit committee and discussed her concerns. The audit committee disagreed with the accounting firm's findings. What should Patty do?

Solution

Patty's accounting firm should issue either a qualified opinion or an adverse opinion. To issue an unqualified opinion stating that the financial statements are presented fairly in all material respects would be misleading to investors and creditors. As an independent auditor, Patty's primary responsibility is to report on the fairness of the financial statements and assure the public that the financial statements are presented in accordance with GAAP. If they are not, her firm has a responsibility to issue either a qualified or adverse opinion.

Financial Statements

An annual report contains the four basic financial statements you have learned in this textbook: the balance sheet (sometimes referred to as *statement of financial position)*, the income statement (or *statement of operations)*, the statement of stockholders' equity, and the statement of cash flows. Corporations are required to report multiple-period information for all financial statements. For example, the **Green Mountain Coffee Roasters, Inc.** 2013 Annual Report presents financial data for the past three fiscal periods (2013, 2012, and 2011).

Notes to Financial Statements

Immediately following the financial statements are the notes to the financial statements. These notes include a summary of significant accounting policies and explanations of specific items on the financial statements. These notes are an important part of the financial statements and are often referred to by investors to understand the information included in the financial statements.

Try It!

Match the different parts of the annual report with the appropriate description.

1. Includes the income statement, balance sheet, statement of stockholders' equity, and statement of cash flows.

2. Attests to the fairness of the presentation of the financial statements.

3. Includes a summary of significant accounting policies and explanations of specific items on the financial statements.

4. Is written by the company to help investors understand the results of operations and the financial condition of the company.

a. Notes to financial statements

b. Report of independent registered public accounting firm

c. Management's discussion and analysis of financial condition and results of operations (MD&A)

d. Financial statements

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise S15-1. MyAccountingLab

HOW DO WE USE HORIZONTAL ANALYSIS TO ANALYZE A BUSINESS?

Learning Objective 2
Perform a horizontal analysis of financial statements

Many decisions hinge on whether the numbers—sales, expenses, and net income, for example—are increasing or decreasing. For example, have sales and other revenues risen from last year? By how much?

Sales may have increased, but considered in isolation, this fact is not very helpful. The *percentage change* in sales over time is more relative and, therefore, more helpful. For example, if a company had sales of $100,000 one year and sales increased by $50,000 the next year, that would be a significant increase. However, if the company had sales of $1 billion and sales increased by $50,000, that would not be significant. Therefore, it is often more relevant to know the percentage increase than the dollar increase.

Horizontal Analysis
The study of percentage changes in comparative financial statements. (Dollar amount of change / Base period amount) × 100.

The study of percentage changes in comparative financial statements is called **horizontal analysis**. Horizontal analysis compares one year to the next. Computing a percentage change in comparative statements requires two steps:

1. Compute the dollar amount of the change from the earlier period to the later period.
2. Divide the dollar amount of change by the earlier period amount. We call the earlier period the base period.

Horizontal analysis is illustrated for Smart Touch Learning as:

			Increase (Decrease)	
	2018	**2017**	**Amount**	**Percentage**
Net Sales	$858,000	$803,000	$55,000	6.8%

Smart Touch Learning's net sales increased by 6.8% during 2018, computed as follows:

Step 1: Compute the dollar amount of change in sales from 2017 to 2018:

Dollar amount of change = Later period amount − Earlier period amount
= $858,000 − $803,000
= $55,000

Step 2: Divide the dollar amount of change by the base period amount and multiply by 100. This computes the percentage change for the period:

Horizontal analysis % = (Dollar amount of change / Base period amount) × 100
= ($55,000 / $803,000) × 100
= 6.8*

*All percentage calculations are rounded to the nearest tenth for the rest of this chapter.

Horizontal Analysis of the Income Statement

The horizontal analysis of Smart Touch Learning's income statement is shown in Exhibit 15-1. This comparative income statement reveals a significant amount of growth during 2018. Although gross profit only increased by 17.3%, Smart Touch Learning was able to trim its expenses, creating an 84.6% growth in net income.

Two items on Smart Touch Learning's income statement with the slowest growth rates are Cost of Goods Sold and Administrative Expenses. Cost of Goods Sold increased by only 0.8%, and administrative expenses decreased by 4.1%. On the bottom line, net income grew by an incredible 84.6%. That is real progress!

Exhibit 15-1 **Comparative Income Statement—Horizontal Analysis**

SMART TOUCH LEARNING
Income Statement
Years Ended December 31, 2018 and 2017

			Increase (Decrease)	
	2018	**2017**	**Amount**	**Percentage**
Net Sales	$ 858,000	$ 803,000	$ 55,000	6.8%
Cost of Goods Sold	513,000	509,000	4,000	0.8
Gross Profit	345,000	294,000	51,000	17.3
Operating Expenses:				
Selling Expenses	126,000	114,000	12,000	10.5
Administrative Expenses	118,000	123,000	(5,000)	(4.1)
Total Operating Expenses	244,000	237,000	7,000	3.0
Operating Income	101,000	57,000	44,000	77.2
Other Revenues and (Expenses):				
Interest Revenue	4,000	0	4,000	—
Interest Expense	(24,000)	(14,000)	10,000	71.4
Total Other Revenues and (Expenses)	(20,000)	(14,000)	6,000	42.9
Income Before Income Taxes	81,000	43,000	38,000	88.4
Income Tax Expense	33,000	17,000	16,000	94.1
Net Income	**$ 48,000**	**$ 26,000**	**$ 22,000**	**84.6%**

Horizontal Analysis of the Balance Sheet

Horizontal analysis of Smart Touch Learning's comparative balance sheet is shown in Exhibit 15-2 (on the next page). This analysis also shows growth in assets, with total assets increasing by 22.2%. Notice that both Cash and Prepaid Expenses decreased during the year, but this decrease was offset by increases in other assets.

Smart Touch Learning's liabilities also grew. Total liabilities increased by 33.0%, and Accrued Liabilities actually decreased, as indicated by the liability figure in parentheses. This is another indicator of positive growth for Smart Touch Learning.

Exhibit 15-2 | **Comparative Balance Sheet—Horizontal Analysis**

SMART TOUCH LEARNING
Balance Sheet
December 31, 2018 and 2017

			Increase (Decrease)	
	2018	**2017**	**Amount**	**Percentage**
Assets				
Current Assets:				
Cash and Cash Equivalents	$ 29,000	$ 32,000	$ (3,000)	(9.4)%
Accounts Receivable, Net	114,000	85,000	29,000	34.1
Merchandise Inventory	113,000	111,000	2,000	1.8
Prepaid Expenses	6,000	8,000	(2,000)	(25.0)
Total Current Assets	262,000	236,000	26,000	11.0
Long-term Investments	18,000	9,000	9,000	100.0
Property, Plant, and Equipment, Net	507,000	399,000	108,000	27.1
Total Assets	**$ 787,000**	**$ 644,000**	**$ 143,000**	**22.2%**
Liabilities				
Current Liabilities:				
Accounts Payable	$ 73,000	$ 68,000	$ 5,000	7.4
Accrued Liabilities	27,000	31,000	(4,000)	(12.9)
Notes Payable	42,000	27,000	15,000	55.6
Total Current Liabilities	142,000	126,000	16,000	12.7
Long-term Liabilities	289,000	198,000	91,000	46.0
Total Liabilities	431,000	324,000	107,000	33.0%
Stockholders' Equity				
Common Stock, no par	186,000	186,000	0	0.0%
Retained Earnings	170,000	134,000	36,000	26.9%
Total Stockholders' Equity	356,000	320,000	36,000	11.3%
Total Liabilities and Stockholders' Equity	**$ 787,000**	**$ 644,000**	**$ 143,000**	**22.2%**

Trend Analysis

Trend analysis is a form of horizontal analysis. Trend percentages indicate the direction a business is taking. For example, how have sales changed over a five-year period? What trend does net income show? These questions can be answered by trend analysis over a period, such as three to five years.

Trend analysis percentages are computed by selecting a base period (for example, the earliest year). The base period amounts are set equal to 100%. The amounts for each subsequent year are expressed as a percentage of the base amount. To compute trend analysis percentages, we divide each item for the following years by the base period amount and multiply by 100.

Trend Analysis
A form of horizontal analysis in which percentages are computed by selecting a base period as 100% and expressing amounts for following periods as a percentage of the base period amount. (Any period amount / Base period amount) × 100.

Trend % = (Any period amount / Base period amount) × 100

Assume Smart Touch Learning's Net Sales were $750,000 in 2014 and rose to $858,000 in 2018. To illustrate trend analysis, review the trend of net sales during 2014–2018. The base year is 2014, so that year's percentage is set equal to 100.

	2018	2017	2016	2015	2014
Net Sales	$ 858,000	$ 803,000	$ 780,000	$ 748,000	$ 750,000
Trend Percentages	114%	107%	104%	99.7%	100%

We want percentages for the five-year period 2014–2018. We compute these by dividing each year's net sales amount by the 2014 net sales amount and multiply by 100. For example, the trend percentage for 2015 is calculated as follows:

$$\begin{aligned} \text{Trend \%} &= (\text{Any period amount / Base period amount}) \times 100 \\ &= (\$748{,}000 / \$750{,}000) \times 100 \\ &= 99.7\% \end{aligned}$$

Notice that net sales decreased slightly in 2015, and then the rate of growth increased from 2016–2018. You can perform a trend analysis on any one or multiple item(s) you consider important. Trend analysis is widely used to predict the future health of a company.

Trend analysis and horizontal analysis are very similar, but they can be used to indicate different things for a company. **Horizontal analysis allows a company to see the percentage change from one year to the next. Trend analysis shows the percentage change from a base year forward to determine whether the trend in net sales, for example, is positive or negative over a longer period of time.**

What is the difference between horizontal analysis and trend analysis?

Try It!

5. Freedom Corp. reported the following on its comparative income statement:

(In millions)	2017	2016
Revenue	$ 10,000	$ 8,000
Cost of Goods Sold	4,500	3,000

Prepare a horizontal analysis of revenues, cost of goods sold, and gross profit—both in dollar amounts and in percentages.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S15-2 and S15-3. MyAccountingLab

HOW DO WE USE VERTICAL ANALYSIS TO ANALYZE A BUSINESS?

Learning Objective 3
Perform a vertical analysis of financial statements

As you have seen, horizontal analysis and trend analysis percentages highlight changes in an item from year to year, or over *time*. But no single technique gives a complete picture of a business, so we also need vertical analysis.

Vertical Analysis
An analysis of a financial statement that reveals the relationship of each statement item to its base amount, which is the 100% figure. (Specific item / Base amount) × 100.

Vertical analysis of a financial statement shows the relationship of each item to its base amount, which is the 100% figure. Every other item on the statement is then reported as a percentage of that base. For the income statement, net sales the base. For the balance sheet, total assets the base.

Vertical analysis % = (Specific item / Base amount) × 100

Vertical Analysis of the Income Statement

Exhibit 15-3 shows the completed vertical analysis of Smart Touch Learning's 2018 and 2017 comparative income statement.

Exhibit 15-3 | **Comparative Income Statement—Vertical Analysis**

SMART TOUCH LEARNING
Income Statement
Years Ended December 31, 2018 and 2017

	2018	Percent of Total	2017	Percent of Total
Net Sales	$ 858,000	100.0%	$ 803,000	100.0%
Cost of Goods Sold	513,000	59.8	509,000	63.4
Gross Profit	345,000	40.2	294,000	36.6
Operating Expenses:				
Selling Expenses	126,000	14.7	114,000	14.2
Administrative Expenses	118,000	13.8	123,000	15.3
Total Operating Expenses	244,000	28.4	237,000	29.5
Operating Income	101,000	11.8	57,000	7.1
Other Revenues and (Expenses):				
Interest Revenue	4,000	0.5	0	0.0
Interest Expense	(24,000)	(2.8)	(14,000)	(1.7)
Total Other Revenues and (Expenses)	(20,000)	(2.3)	(14,000)	(1.7)
Income Before Income Taxes	81,000	9.4	43,000	5.4
Income Tax Expense	33,000	3.8	17,000	2.1
Net Income	**$ 48,000**	**5.6%**	**$ 26,000**	**3.2%**

The vertical analysis percentage for Smart Touch Learning's cost of goods sold is 59.8% of net sales (($513,000 / $858,000) × 100 = 59.8%) in 2018 and 63.4% (($509,000 / $803,000) × 100 = 63.4%) in 2017. This means that for every $1 in net sales, almost $0.60 in 2018 and approximately $0.63 in 2017 is spent on cost of goods sold.

Smart Touch Learning's net income is 5.6% of net sales in 2018 and 3.2% of net sales in 2017. That improvement from 2017 to 2018 is extremely good. Suppose under normal conditions a company's net income is 10% of revenues. A drop to 4% may cause the investors to be alarmed and sell their stock.

Vertical Analysis of the Balance Sheet

Exhibit 15-4 depicts the vertical analysis of Smart Touch Learning's balance sheet. The base amount (100%) is total assets. The base amount is also total liabilities and stockholders' equity because they are exactly the same number (remember the accounting equation); in 2018, that's $787,000.

Exhibit 15-4 Comparative Balance Sheet—Vertical Analysis

SMART TOUCH LEARNING
Balance Sheet
December 31, 2018 and 2017

	2018	Percent of Total	2017	Percent of Total
Assets				
Current Assets:				
Cash and Cash Equivalents	$ 29,000	3.7%	$ 32,000	5.0%
Accounts Receivable, Net	114,000	14.5	85,000	13.2
Merchandise Inventory	113,000	14.4	111,000	17.2
Prepaid Expenses	6,000	0.8	8,000	1.2
Total Current Assets	262,000	33.3	236,000	36.6
Long-term Investments	18,000	2.3	9,000	1.4
Property, Plant, and Equipment, Net	507,000	64.4	399,000	62.0
Total Assets	**$ 787,000**	**100.0%**	**$ 644,000**	**100.0%**
Liabilities				
Current Liabilities:				
Accounts Payable	$ 73,000	9.3%	$ 68,000	10.6%
Accrued Liabilities	27,000	3.4	31,000	4.8
Notes Payable	42,000	5.3	27,000	4.2
Total Current Liabilities	142,000	18.0	126,000	19.6
Long-term Liabilities	289,000	36.7	198,000	30.7
Total Liabilities	431,000	54.8	324,000	50.3
Stockholders' Equity				
Common Stock, no par	186,000	23.6	186,000	28.9
Retained Earnings	170,000	21.6	134,000	20.8
Total Stockholders' Equity	356,000	45.2	320,000	49.7
Total Liabilities and Stockholders' Equity	**$ 787,000**	**100.0%**	**$ 644,000**	**100.0%**

The vertical analysis of Smart Touch Learning's balance sheet reveals several interesting things:

- Current assets make up 33.3% of total assets in 2018 and 36.6% of total assets in 2017. This is typical for most companies with current assets representing close to 30% of total assets.
- Total liabilities are 54.8% of total assets in 2018, increasing slightly from 2017, 50.3%.
- Stockholders' equity makes up 45.2% of total assets in 2018 and 49.7% of total assets in 2017. The percentage share of total assets was nearly equally distributed between total liabilities and total equity for both years.

Common-Size Statements

Horizontal analysis and vertical analysis provide much useful data about a company. As we have seen, Smart Touch Learning's percentages depict a very successful company. But the data apply only to one business.

To compare Smart Touch Learning to another company, we can use a common-size statement. A **common-size statement** reports only percentages—the same percentages that appear in a vertical analysis. By only reporting percentages, it removes dollar value bias when comparing one company to another company. **Dollar value bias** is the bias one sees from comparing numbers in absolute (dollars) rather than relative (percentage) terms. For us, $1 million seems like a large number. For some large companies, it is immaterial.

Common-Size Statement
A financial statement that reports only percentages (no dollar amounts).

Dollar Value Bias
The bias one sees from comparing numbers in absolute (dollars) rather than relative (percentage) terms.

We could prepare common-size statements for Smart Touch Learning from year to year; however, we will start by preparing common-size income statements for Smart Touch Learning and Learning School, another fictitious company, both of which compete in the same industry. Which company earns a higher percentage of revenues as profits for its shareholders? Exhibit 15-5 gives both companies' common-size income statements for 2018 so that we can compare them on a relative, not absolute, basis.

Exhibit 15-5 **Common-Size Income Statement—Smart Touch Learning Versus Learning School**

SMART TOUCH LEARNING Versus LEARNING SCHOOL
Common-Size Income Statement
Year Ended December 31, 2018

	Smart Touch Learning	**Learning School**
Net Sales	100.0%	100.0%
Cost of Goods Sold	59.8	36.3
Gross Profit	40.2	63.7
Operating Expenses:		
Selling Expenses	14.7	21.8
Administrative Expenses	13.8	7.3
Total Operating Expenses	28.4	29.1
Operating Income	11.8	34.6
Other Revenues and (Expenses):		
Interest Revenue	0.5	11.5
Interest Expense	(2.8)	(10.3)
Total Other Revenues and (Expenses)	(2.3)	1.2
Income Before Income Taxes	9.4	35.8
Income Tax Expense	3.8	12.3
Net Income	**5.6%**	**23.5%**

Exhibit 15-5 shows that Learning School was more profitable than Smart Touch Learning in 2018. Learning School's gross profit percentage is 63.7%, compared with Smart Touch Learning's 40.2%. This means that Learning School is earning more gross profit from every dollar of revenue than Smart Touch Learning is earning. And, most importantly, Learning School's percentage of net income to revenues is 23.5%. That means almost one-fourth of Learning School's revenues result in profits for the company's stockholders. Smart Touch Learning's percentage of net income to revenues, on the other hand, is 5.6%, significantly lower than Learning School's. Smart Touch Learning's lower net income is directly attributable to its larger percentage of cost of goods sold to net sales. Smart Touch Learning's cost of goods sold represents 59.8% of net sales, whereas Learning School's cost of goods sold is only 36.3%.

Benchmarking

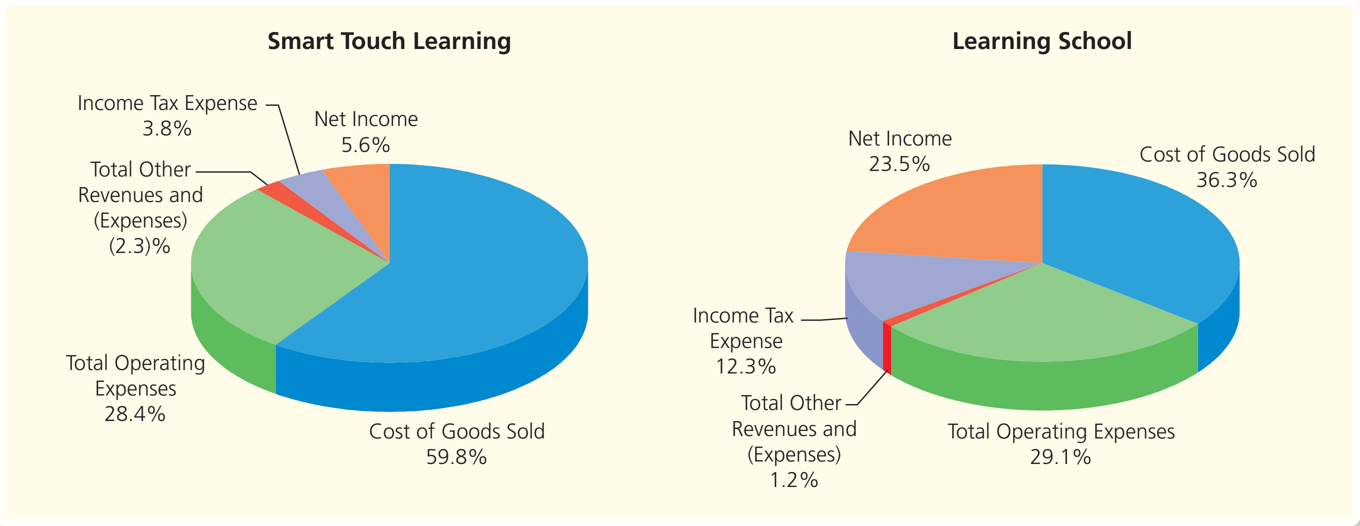
Benchmarking is the practice of comparing a company with other leading companies. It often uses the common-size percentages in a graphical manner to highlight differences. There are two main types of benchmarks in financial statement analysis: benchmarking against a key competitor and benchmarking against the industry average.

Benchmarking
The practice of comparing a company with other leading companies.

Benchmarking Against a Key Competitor

Exhibit 15-5 uses a key competitor, Learning School, to compare Smart Touch Learning's profitability. The two companies compete in the same industry, so Learning School serves as an ideal benchmark for Smart Touch Learning. The charts in Exhibit 15-6 highlight the profitability difference between the companies. Focus on the segments of the graphs showing net income. Learning School is clearly more profitable than Smart Touch Learning.

Exhibit 15-6 Graphical Analysis of Common-Size Income Statement—Smart Touch Learning Versus Learning School



Benchmarking Against the Industry Average

The industry average can also serve as a very useful benchmark for evaluating a company. An industry comparison would show how Smart Touch Learning is performing alongside the average for the e-learning industry. *Annual Statement Studies*, published by the Risk Management Association, provides common-size statements for most industries. To compare Smart Touch Learning to the industry average, we would simply insert the industry-average common-size income statement in place of Learning School in Exhibit 15-5.

As you are taking classes toward your degree, how do you know how quickly you can complete your studies? If you knew the average credit hours taken each semester was 12 credit hours, then 12 credit hours would be your benchmark. Comparing the number of classes you take to the average of 12 credit hours a semester is the same concept as benchmarking. Maybe you are taking 15 credit hours a semester. Then you'd be completing your degree faster than the average student. Maybe you take only 3 credit hours in the spring so you can work a part-time job. Then you'd be completing classes at a slower pace than average.

Try It!

6. Monroe Corp. reported the following amounts on its balance sheet at December 31, 2016 and 2015:

	2016	**2015**
Cash and Receivables	$ 35,000	$ 40,000
Merchandise Inventory	20,000	15,000
Property, Plant, and Equipment, Net	80,000	60,000
Total Assets	$ 135,000	$ 115,000

Prepare a vertical analysis of Monroe Corp. for 2016 and 2015.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S15-4 and S15-5. MyAccountingLab

HOW DO WE USE RATIOS TO ANALYZE A BUSINESS?

Learning Objective 4
Compute and evaluate the standard financial ratios

Online financial databases, such as LexisNexis and the Dow Jones, provide data on thousands of companies. Suppose you want to compare some companies' recent earnings histories. You might want to compare companies' returns on stockholders' equity. You could use a computer to search the databases and give you the names of the 20 companies with the highest return on equity. You can use any ratio to search for information that is relevant to a particular decision.

Remember, however, that no single ratio tells the whole picture of any company's performance. Different ratios explain different aspects of a company. The ratios we discuss in this chapter may be classified and used for the following purposes:

- Evaluating the ability to pay current liabilities
- Evaluating the ability to sell merchandise inventory and collect receivables
- Evaluating the ability to pay long-term debt
- Evaluating profitability
- Evaluating stock as an investment

We will use the comparative income statement and balance sheet of Smart Touch Learning, shown in Exhibit 15-7, to discuss the ratios that can be used to evaluate a company. Let's begin by discussing ratios that can be used to evaluate a company's ability to pay its current liabilities.

Exhibit 15-7 **Comparative Financial Statements**

SMART TOUCH LEARNING
Balance Sheet
December 31, 2018 and 2017

	2018	2017
Assets		
Current Assets:		
Cash and Cash Equivalents	$ 29,000	$ 32,000
Accounts Receivable, Net	114,000	85,000
Merchandise Inventory	113,000	111,000
Prepaid Expenses	6,000	8,000
Total Current Assets	262,000	236,000
Long-term Investments	18,000	9,000
Property, Plant, and Equipment, Net	507,000	399,000
Total Assets	**$ 787,000**	**$ 644,000**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 73,000	$ 68,000
Accrued Liabilities	27,000	31,000
Notes Payable	42,000	27,000
Total Current Liabilities	142,000	126,000
Long-term Liabilities	289,000	198,000
Total Liabilities	431,000	324,000
Stockholders' Equity		
Common Stock, no par	186,000	186,000
Retained Earnings	170,000	134,000
Total Stockholders' Equity	356,000	320,000
Total Liabilities and Stockholders' Equity	**$ 787,000**	**$ 644,000**

SMART TOUCH LEARNING
Income Statement
Years Ended December 31, 2018 and 2017

	2018	2017
Net Sales	$ 858,000	$ 803,000
Cost of Goods Sold	513,000	509,000
Gross Profit	345,000	294,000
Operating Expenses:		
Selling Expenses	126,000	114,000
Administrative Expenses	118,000	123,000
Total Operating Expenses	244,000	237,000
Operating Income	101,000	57,000
Other Revenues and (Expenses):		
Interest Revenue	4,000	0
Interest Expense	(24,000)	(14,000)
Total Other Revenues and (Expenses)	(20,000)	(14,000)
Income Before Income Taxes	81,000	43,000
Income Tax Expense	33,000	17,000
Net Income	**$ 48,000**	**$ 26,000**

Evaluating the Ability to Pay Current Liabilities

Determining a company's working capital is a good starting place to evaluate a company's ability to pay its current liabilities. **Working capital** measures the ability to meet short-term obligations with current assets. Working capital is defined as follows:

Working Capital
A measure of a business's ability to meet its short-term obligations with its current assets. Current assets − Current liabilities.

Working capital = Current assets − Current liabilities

Smart Touch Learning's working capital at December 31, 2018 and 2017, is calculated as follows:

Working capital = Current assets − Current liabilities
2018: $262,000 − $142,000 = $120,000
2017: $236,000 − $126,000 = $110,000

Smart Touch Learning's working capital is positive, indicating that the company has more current assets than current liabilities, but additional information would be helpful. Three additional decision tools based on working capital are the current ratio, cash ratio, and acid-test ratio.

Current Ratio

Current Ratio
Measures the company's ability to pay current liabilities from current assets. Total current assets / Total current liabilities.

The most widely used ratio is the **current ratio**, which is calculated as the total current assets divided by total current liabilities. The current ratio measures a company's ability to pay its current liabilities with its current assets.

The current ratios of Smart Touch Learning, at December 31, 2018 and 2017, along with the average for the industry, are as follows:

$$\text{Current ratio} = \frac{\text{Total current assets}}{\text{Total current liabilities}}$$

$$\text{2018: } \frac{\$262{,}000}{\$142{,}000} = 1.85$$

$$\text{2017: } \frac{\$236{,}000}{\$126{,}000} = 1.87$$

$$\text{Industry average} = 0.60$$

A high current ratio indicates that the business has sufficient current assets to maintain normal business operations. Compare Smart Touch Learning's current ratio of 1.85 for 2018 with the industry average of 0.60.

What is an acceptable current ratio? The answer depends on the industry. The norm for companies in most industries is around 1.50, as reported by the Risk Management Association. Smart Touch Learning's current ratio of 1.85 is strong. Keep in mind that we would not want to see a current ratio that is too high, say 2.5. This would indicate that the company is too liquid and, therefore, is not using its assets effectively. For example, the company may need to reduce merchandise inventory levels so as not to tie up available resources.

ETHICS

Should the debt be reclassified?

Victor Brannon, senior accountant for Moose Corporation, was preparing the latest financial ratios. He knew that the ratios were watched carefully by Moose Corporation's lenders due to strict loan agreements that required the corporation to maintain a minimum current ratio of 1.5. Victor knew that the past quarter's financial ratios would not meet the lenders' requirements. His boss, Cara Romano, suggested that Victor classify a note payable due in 11 months as a long-term liability. What should Victor do? What would you do?

Solution

Assets and liabilities are classified as current if they will be used or settled within one year or the operating cycle, whichever is longer. The classification between current and long-term is clear. Victor should not classify the note payable as a long-term liability. It should be classified as current even though the corporation will not meet the lenders' requirements.

Cash Ratio

Cash is an important part of every business. Without an adequate supply of available cash, businesses cannot continue to operate. Businesses, therefore, monitor cash very carefully. One measure that can be used to calculate a company's liquidity is the cash ratio. The **cash ratio** helps to determine a company's ability to meet its short-term obligations and is calculated as cash plus cash equivalents divided by total current liabilities.

Cash Ratio
A measure of a company's ability to pay current liabilities from cash and cash equivalents: (Cash + Cash equivalents) / Total current liabilities.

Notice that the cash ratio includes cash and cash equivalents. As a reminder, cash equivalents are highly liquid investments that can be converted into cash in three months or less. Examples of cash equivalents are money-market accounts and investments in U.S. government securities.

The cash ratios of Smart Touch Learning, at December 31, 2018 and 2017, along with the average for the industry are as follows:

$$\text{Cash ratio} = \frac{\text{Cash} + \text{Cash equivalents}}{\text{Total current liabilities}}$$

$$2018\text{:}\ \frac{\$29{,}000}{\$142{,}000} = 0.20$$

$$2017\text{:}\ \frac{\$32{,}000}{\$126{,}000} = 0.25$$

$$\text{Industry average} = 0.40$$

The cash ratio has decreased slightly from 2017 to 2018 due to a decrease in available cash and cash equivalents and an increase in total current liabilities. This ratio is the most conservative valuation of liquidity because it looks at only cash and cash equivalents, leaving out other current assets such as merchandise inventory and accounts receivable. Notice that for both years, the cash ratio was below 1.0. Having a cash ratio below 1.0 is a good thing. A cash ratio above 1.0 might signify that the company has an unnecessarily large amount of cash supply. This cash could be used to generate higher profits or be distributed as dividends to stockholders. However, a very low ratio doesn't send a strong message to investors and creditors that the company has the ability to repay its short-term debt.

Acid-Test (or Quick) Ratio

The **acid-test ratio** (sometimes called the *quick ratio*) tells us whether a company can pay all its current liabilities if they came due immediately. That is, could the company pass the acid test? The acid-test ratio is a more stringent measure than the current ratio, but it is not as stringent as the cash ratio.

To compute the acid-test ratio, we add cash and cash equivalents, short-term investments (those that may be sold in the next 12 months or the business operating cycle, whichever is longer), and net current receivables (accounts and notes receivable, net of allowances) and divide this sum by total current liabilities. Merchandise inventory and prepaid expenses are *not* included in the acid-test ratio because they are the least-liquid current assets. Smart Touch Learning's acid-test ratios for 2018 and 2017 follow:

Acid-Test Ratio
The ratio of the sum of cash, cash equivalents, short-term investments, and net current receivables to total current liabilities. The ratio tells whether the entity can pay all its current liabilities if they came due immediately. (Cash including cash equivalents + Short-term investments + Net current receivables) / Total current liabilities.

$$\text{Acid-test ratio} = \frac{\text{Cash including cash equivalents} + \text{Short-term investments} + \text{Net current receivables}}{\text{Total current liabilities}}$$

$$2018\text{:}\ \frac{\$29{,}000 + \$0 + \$114{,}000}{\$142{,}000} = 1.01$$

$$2017\text{:}\ \frac{\$32{,}000 + \$0 + \$85{,}000}{\$126{,}000} = 0.93$$

$$\text{Industry average} = 0.46$$

The company's acid-test ratio improved during 2018 and is significantly better than the industry average. The norm for the acid-test ratio ranges from 0.20 for shoe retailers to 1.20 for manufacturers of equipment, as reported by the Risk Management Association. An acid-test ratio of 0.90 to 1.00 is acceptable in most industries.

Evaluating the Ability to Sell Merchandise Inventory and Collect Receivables

In this section, we discuss five ratios that measure a company's ability to sell merchandise inventory and collect receivables.

Inventory Turnover

Inventory Turnover
Measures the number of times a company sells its average level of merchandise inventory during a period. Cost of goods sold / Average merchandise inventory.

The **inventory turnover** ratio measures the number of times a company sells its average level of merchandise inventory during a year. A high rate of turnover indicates ease in selling merchandise inventory; a low rate indicates difficulty. A value of 4 means that the company sold its average level of merchandise inventory four times—once every three months—during the year.

To compute inventory turnover, we divide cost of goods sold by the average merchandise inventory for the period. We use the cost of goods sold—not sales—because both cost of goods sold and inventory are stated *at cost.* Sales at *retail* are not comparable with merchandise inventory at *cost.*

Smart Touch Learning's inventory turnover for 2018 is as follows:

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average merchandise inventory}}$$

$$\text{2018: } \frac{\$513{,}000}{[(\$111{,}000 + \$113{,}000)\ /\ 2]} = 4.58$$

$$\text{Industry average} = 27.70$$

Cost of goods sold comes from the income statement (Exhibit 15-7). Average merchandise inventory is figured by adding the beginning merchandise inventory of $111,000 to the ending inventory of $113,000 and dividing by 2. (See the balance sheet, Exhibit 15-7. Remember that 2017's ending balances become 2018's beginning balances.)

Inventory turnover varies widely with the nature of the business. For example, most manufacturers of farm machinery have an inventory turnover close to three times a year. In contrast, companies that remove natural gas from the ground hold their merchandise inventory for a very short period of time and have an average turnover of 30. Smart Touch Learning's turnover of 4.58 times a year means, on average, the company has enough inventory to handle sales for almost 80 days (365 / 4.58 times). This is very low for its industry, which has an average turnover of 27.70 times per year. This ratio has identified an area in which Smart Touch Learning needs to improve.

Days' Sales in Inventory

Days' Sales in Inventory
Measures the average number of days that inventory is held by a company. 365 days / Inventory turnover.

Another key measure is the **days' sales in inventory** ratio. This measures the average number of days merchandise inventory is held by the company. Smart Touch Learning's days' sales in inventory for 2018 is as follows:

$$\text{Days' sales in inventory} = \frac{\text{365 days}}{\text{Inventory turnover}}$$

$$\text{2018: } \frac{\text{365 days}}{4.58} = \text{79.7 days}$$

$$\text{Industry average} = \text{13 days}$$

Days' sales in inventory varies widely, depending on the business. Smart Touch Learning's days' sales in inventory is 79.7 days—too high for its industry, which has an average days' sales in inventory ratio of only 13 days. This ratio has identified an area in which Smart Touch Learning needs to improve. Smart Touch Learning should focus on reducing average merchandise inventory held. By decreasing average merchandise inventory, the company can increase inventory turnover and lower the average days' sales in merchandise inventory. Smart Touch Learning will also be able to reduce its merchandise inventory storage and insurance costs as well as reduce the risk of holding obsolete merchandise inventory.

Gross Profit Percentage

Gross profit (sometimes called *gross margin*) is net sales minus the cost of goods sold. Merchandisers strive to increase the **gross profit percentage** (also called the *gross margin percentage*). This ratio measures the profitability of each net sales dollar above the cost of goods sold and is computed as gross profit divided by net sales revenue.

Gross Profit Percentage
Measures the profitability of each sales dollar above the cost of goods sold. Gross profit / Net sales revenue.

The gross profit percentage is one of the most carefully watched measures of profitability. It reflects a business's ability to earn a profit on the merchandise inventory. The gross profit earned on merchandise inventory must be high enough to cover the remaining operating expenses and to earn net income. A small increase in the gross profit percentage from last year to this year may signal an important rise in income. Conversely, a small decrease from last year to this year may signal trouble.

Smart Touch Learning's gross profit percentage for 2018 is as follows:

$$\text{Gross profit percentage} = \frac{\text{Gross profit}}{\text{Net sales revenue}}$$

$$2018\text{: } \frac{\$345{,}000}{\$858{,}000} = 0.402 = 40.2\%$$

$$\text{Industry average} = 43\%$$

Gross profit percentage varies widely, depending on the business. Smart Touch Learning's gross profit percentage is 40.2%, which is slightly lower than the industry average of 43%. This ratio has identified an area in which Smart Touch Learning needs to improve. To increase gross profit percentage, Smart Touch Learning needs to decrease the cost of the merchandise inventory and/or increase revenue (selling price). Additionally, addressing Smart Touch Learning's inventory turnover issues will probably help Smart Touch Learning to increase its gross profit percentage.

Accounts Receivable Turnover Ratio

The **accounts receivable turnover ratio** measures the number of times the company collects the average receivables balance in a year. The higher the ratio, the faster the cash collections. However, a receivable turnover that is too high may indicate that credit is too tight, causing the loss of sales to good customers. To compute accounts receivable turnover, we divide net credit sales (assuming all Smart Touch Learning's sales from Exhibit 15-7 are on account) by average net accounts receivable.

Accounts Receivable Turnover Ratio
A ratio that measures the number of times the company collects the average accounts receivable balance in a year. Net credit sales / Average net accounts receivable.

Smart Touch Learning's accounts receivable turnover ratio for 2018 is computed as follows:

$$\text{Accounts receivable turnover ratio} = \frac{\text{Net credit sales}}{\text{Average net accounts receivable}}$$

$$2018\text{: } \frac{\$858{,}000}{[(\$85{,}000 + \$114{,}000)\ /\ 2]} = 8.6$$

$$\text{Industry average} = 29.1$$

Net credit sales, assumed to equal net sales, comes from the income statement (Exhibit 15-7). Average net accounts receivable is figured by adding the beginning

Accounts Receivable of $85,000 to the ending Accounts Receivable of $114,000 and dividing by 2. (See the balance sheet, Exhibit 15-7.)

Smart Touch Learning's accounts receivable turnover ratio of 8.6 times per year is much slower than the industry average of 29.1. Why the difference? Smart Touch Learning is a fairly new business that sells to established people who pay their accounts over time. Further, this turnover coincides with the lower-than-average inventory turnover. So, Smart Touch Learning may achieve a higher accounts receivable turnover by increasing its inventory turnover ratio.

Days' Sales in Receivables

Days' Sales in Receivables
The ratio of average net accounts receivable to one day's sales. The ratio tells how many days it takes to collect the average level of accounts receivable. 365 days / Accounts receivable turnover ratio.

Days' sales in receivables, also called the *collection period*, indicates how many days it takes to collect the average level of receivables and is computed as 365 days divided by the accounts receivable turnover ratio. The number of days in average accounts receivable should be close to the number of days customers are allowed to make payment. The shorter the collection period, the more quickly the organization can use its cash. The longer the collection period, the less cash is available for operations.

To compute this ratio for Smart Touch Learning for 2018, we divide 365 days by the accounts receivable turnover ratio we previously calculated:

$$\text{Days' Sales in Receivables} = \frac{\text{365 days}}{\text{Accounts receivable turnover ratio}}$$

$$\text{2018: } \frac{\text{365 days}}{8.6} = \text{42.4 days}$$

$$\text{Industry average} = \text{25 days}$$

Smart Touch Learning's ratio tells us that 42.4 average days' sales remain in Accounts Receivable and need to be collected. The company's days' sales in receivables ratio is much higher (worse) than the industry average of 25 days. Smart Touch Learning might give its customers a longer time to pay, such as 45 days versus 30 days. Alternatively, Smart Touch Learning's credit department may need to review the criteria it uses to evaluate individual customers' credit. Without the customers' good paying habits, the company's cash flow would suffer.

Evaluating the Ability to Pay Long-Term Debt

The ratios discussed so far yield insight into current assets and current liabilities. They help us measure ability to sell merchandise inventory, collect receivables, and pay current liabilities. Most businesses also have long-term debt. Three key indicators of a business's ability to pay long-term liabilities are the debt ratio, the debt to equity ratio, and the times-interest-earned ratio.

Debt Ratio

Debt Ratio
Shows the proportion of assets financed with debt. Total liabilities / Total assets.

The relationship between total liabilities and total assets—called the **debt ratio**—shows the proportion of assets financed with debt and is calculated by dividing total liabilities by total assets. If the debt ratio is 100%, then all the assets are financed with debt. A debt ratio of 50% means that half the assets are financed with debt, and the other half are financed by the owners of the business. The higher the debt ratio, the higher the company's financial risk. The debt ratio can be used to evaluate a business's ability to pay its debts.

The debt ratios for Smart Touch Learning at the end of 2018 and 2017 follow:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

$$2018: \frac{\$431{,}000}{\$787{,}000} = 0.548 = 54.8\%$$

$$2017: \frac{\$324{,}000}{\$644{,}000} = 0.503 = 50.3\%$$

Industry average = 69%

Both total liabilities and total asset amounts are from the balance sheet, presented in Exhibit 15-7. Smart Touch Learning's debt ratio in 2018 of 54.8% is not very high. The Risk Management Association reports that the average debt ratio for most companies ranges from 57% to 67%, with relatively little variation from company to company. Smart Touch Learning's debt ratio indicates a fairly low-risk position compared with the industry average debt ratio of 69%.

Debt to Equity Ratio

The relationship between total liabilities and total equity—called the **debt to equity ratio**—shows the proportion of total liabilities relative to total equity. Thus, this ratio measures financial leverage. If the debt to equity ratio is greater than 1, then the company is financing more assets with debt than with equity. If the ratio is less than 1, then the company is financing more assets with equity than with debt. The higher the debt to equity ratio, the greater the company's financial risk.

Debt to Equity Ratio
A ratio that measures the proportion of total liabilities relative to total equity. Total liabilities / Total equity.

The debt to equity ratios for Smart Touch Learning at the end of 2018 and 2017 follow:

$$\text{Debt to equity ratio} = \frac{\text{Total liabilities}}{\text{Total equity}}$$

$$2018: \frac{\$431{,}000}{\$356{,}000} = 1.21$$

$$2017: \frac{\$324{,}000}{\$320{,}000} = 1.01$$

Industry average = 2.23

Smart Touch Learning's debt to equity ratio in 2018 of 1.21 is not very high. Smart Touch Learning's debt to equity ratio indicates a fairly low-risk position compared with the industry average debt to equity ratio of 2.23.

Times-Interest-Earned Ratio

The debt ratio and debt to equity ratio say nothing about the ability to pay interest expense. Analysts and investors use the **times-interest-earned ratio** to evaluate a business's ability to pay interest expense. This ratio measures the number of times earnings before interest and taxes (EBIT) can cover (pay) interest expense. This ratio is also called the *interest-coverage ratio*. A high times-interest-earned ratio indicates a business's ease in paying interest expense; a low ratio suggests difficulty. The times-interest-earned ratio is calculated as EBIT (Net income + Income tax expense + Interest expense) divided by interest expense.

Times-Interest-Earned Ratio
Evaluates a business's ability to pay interest expense. (Net income + Income tax expense + Interest expense) / Interest expense.

Calculation of Smart Touch Learning's times-interest-earned ratio follows:

$$\text{Times-interest-earned ratio} = \frac{\text{Net income} + \text{Income tax expense} + \text{Interest expense}}{\text{Interest expense}}$$

$$2018\text{:}\ \frac{\$48{,}000 + \$33{,}000 + \$24{,}000}{\$24{,}000} = 4.38$$

$$2017\text{:}\ \frac{\$26{,}000 + \$17{,}000 + \$14{,}000}{\$14{,}000} = 4.07$$

$$\text{Industry average} = 7.80$$

The company's times-interest-earned ratios of 4.38 for 2018 and 4.07 for 2017 are significantly lower than the industry average of 7.80 times, but it is slightly better than the ratio for the average U.S. business. The norm for U.S. business, as reported by the Risk Management Association, falls in the range of 2.0 to 3.0. When you consider Smart Touch Learning's debt ratio and its times-interest-earned ratio, Smart Touch Learning appears to have little difficulty paying its liabilities.

Evaluating Profitability

The fundamental goal of business is to earn a profit. Ratios that measure profitability often are reported in the business press. Let's examine five profitability measures.

Profit Margin Ratio

Profit Margin Ratio
A profitability measure that shows how much net income is earned on every dollar of net sales. Net income / Net sales.

The **profit margin ratio** shows the percentage of each net sales dollar earned as net income. In other words, the profit margin ratio shows how much net income a business earns on every $1.00 of sales. This ratio focuses on the profitability of a business and is calculated as net income divided by net sales.

Smart Touch Learning's profit margin ratio follows:

$$\text{Profit margin ratio} = \frac{\text{Net income}}{\text{Net sales}}$$

$$2018\text{:}\ \frac{\$48{,}000}{\$858{,}000} = 0.056 = 5.6\%$$

$$2017\text{:}\ \frac{\$26{,}000}{\$803{,}000} = 0.032 = 3.2\%$$

$$\text{Industry average} = 1.7\%$$

Both net income and net sales amounts are from the income statement presented in Exhibit 15-7. Companies strive for a high profit margin. The higher the profit margin, the more sales dollars end up as profit. The increase in Smart Touch Learning's profit margin ratio from 2017 to 2018 is significant and identifies the company as more successful than the average e-learning providers, whose profit margin ratio is 1.7%.

Rate of Return on Total Assets

Rate of Return on Total Assets
A ratio that measures the success a company has in using its assets to earn income. (Net income + Interest expense) / Average total assets.

The **rate of return on total assets** measures a company's success in using assets to earn a profit. There are two ways that a company can finance its assets:

- Debt—A company can borrow cash from creditors to purchase assets. Creditors earn interest on the money that is loaned.
- Equity—A company receives cash or other assets from stockholders. Stockholders invest in the company and hope to receive a return on their investment.

Rate of return on total assets is calculated by adding interest expense to net income and dividing by average total assets. Interest expense is added back to net income to determine the real return on the assets regardless of the corporation's financing choices (debt or equity).

Computation of the rate of return on total assets ratio for Smart Touch Learning follows:

$$\text{Rate of return on total assets} = \frac{\text{Net income} + \text{Interest expense}}{\text{Average total assets}}$$

$$\text{2018: } \frac{\$48{,}000 + \$24{,}000}{[(\$644{,}000 + \$787{,}000)\ /\ 2]} = 0.101 = 10.1\%$$

$$\text{Industry average} = 6.0\%$$

Net income and interest expense come from the income statement (Exhibit 15-7). Average total assets is figured by adding the beginning total assets of $644,000 to the ending total assets of $787,000 and dividing by 2. (See the balance sheet, Exhibit 15-7.) Smart Touch Learning's rate of return on total assets ratio of 10.1% is much better than the industry average of 6.0%.

Asset Turnover Ratio

The **asset turnover ratio** measures the amount of net sales generated for each average dollar of total assets invested. This ratio measures how well a company is using its assets to generate sales revenues. To compute this ratio, we divide net sales by average total assets.

Asset Turnover Ratio
Measures how efficiently a business uses its average total assets to generate sales. Net sales / Average total assets.

Smart Touch Learning's 2018 asset turnover ratio is as follows:

$$\text{Asset turnover ratio} = \frac{\text{Net sales}}{\text{Average total assets}}$$

$$\text{2018: } \frac{\$858{,}000}{[(\$644{,}000 + \$787{,}000)\ /\ 2]} = 1.20 \text{ times}$$

$$\text{Industry average} = 3.52 \text{ times}$$

Smart Touch Learning's asset turnover ratio of 1.20 is much lower than the industry average of 3.52 times, indicating that Smart Touch Learning is generating less net sales for each average dollar of total assets invested. Recall that Smart Touch Learning's gross profit percentage was lower than the industry's also. Normally, companies with high gross profit percentages will have low asset turnover. Companies with low gross profit percentages will have high asset turnover ratios. This is another area in which Smart Touch Learning's management must consider options to increase sales and decrease its average total assets to improve this ratio.

Rate of Return on Common Stockholders' Equity

A popular measure of profitability is **rate of return on common stockholders' equity**, often shortened to *return on equity*. This ratio shows the relationship between net income available to common stockholders and their average common equity invested in the company. The rate of return on common stockholders' equity shows how much income is earned for each $1 invested by the common shareholders.

Rate of Return on Common Stockholders' Equity
Shows the relationship between net income available to common stockholders and their average common equity invested in the company. (Net income − Preferred dividends) / Average common stockholders' equity.

To compute this ratio, we first subtract preferred dividends from net income to get net income available to the common stockholders. (Smart Touch Learning does not have any preferred stock issued, so preferred dividends are zero.) Then we divide net income available to common stockholders by average common stockholders' equity during the year. Common equity is total stockholders' equity minus preferred equity. Average common stockholders' equity is the average of the beginning and ending common stockholders' equity balances.

The 2018 rate of return on common stockholders' equity for Smart Touch Learning follows:

$$\text{Rate of return on common stockholders' equity} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common stockholders' equity}}$$

$$2018\text{:}\ \frac{\$48{,}000 - \$0}{[(\$320{,}000 + \$356{,}000)\ /\ 2]} = 0.142 = 14.2\%$$

$$\text{Industry average} = 10.5\%$$

Smart Touch Learning's rate of return on common stockholders' equity of 14.2% is higher than its rate of return on total assets of 10.1%. This difference results from borrowing at one rate—say, 8%—and investing the money to earn a higher rate, such as the firm's 14.2% return on equity. This practice is called **trading on the equity**, or using *leverage*. It is directly related to the debt ratio. The higher the debt ratio, the higher the leverage. Companies that finance operations with debt are said to *leverage* their positions.

Trading on the Equity
Earning more income on borrowed money than the related interest expense, thereby increasing the earnings for the owners of the business.

During good times, leverage increases profitability. But leverage can have a negative impact on profitability as well. Therefore, leverage is a double-edged sword, increasing profits during good times but compounding losses during bad times. Compare Smart Touch Learning's rate of return on common stockholders' equity with the industry average of 10.5%. Once again, Smart Touch Learning is performing much better than the average company in its industry. A rate of return on common stockholders' equity of 15% to 20% year after year is considered good in most industries. At 14.2%, Smart Touch Learning is doing well.

Earnings per Share (EPS)

Earnings per Share (EPS)
Amount of a company's net income (loss) for each share of its outstanding common stock. (Net income − Preferred dividends) / Weighted average number of common shares outstanding.

Earnings per share (EPS) is perhaps the most widely quoted of all financial statistics. EPS is the only ratio that must appear on the financial statements. Earnings per share reports the amount of net income (loss) for each share of the company's *outstanding common stock*. Earnings per share is calculated as net income minus preferred dividends divided by the weighted average number of common shares outstanding. Preferred dividends are subtracted from net income because the preferred stockholders have the first claim to dividends. The computation for the weighted average number of common shares outstanding is covered in advanced accounting courses. For simplicity, we will determine earnings per share on the average number of shares outstanding, calculated as the beginning balance plus ending balance divided by two.

FASB requires that earnings per share appear on the income statement. Corporations report a separate EPS figure for each element of income, which is shown in more detail in Appendix 15A at the end of this chapter.

Smart Touch Learning's EPS for 2018 and 2017 follow. (Note that Smart Touch Learning had 10,000 shares of common stock outstanding throughout both years.)

$$\text{Earnings per share} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average number of common shares outstanding}}$$

$$2018\text{:}\ \frac{\$48{,}000 - \$0}{10{,}000\text{ shares}} = \$4.80\ /\ \text{share}$$

$$2017\text{:}\ \frac{\$26{,}000 - \$0}{10{,}000\text{ shares}} = \$2.60\ /\ \text{share}$$

$$\text{Industry average} = \$9.76\ /\ \text{share}$$

Smart Touch Learning's EPS increased significantly in 2018 (by almost 85%). Its stockholders should not expect this big a boost in EPS every year. Most companies strive to increase EPS by 10% to 15% annually, and leading companies do so. But even the most successful companies have an occasional bad year. EPS for the industry at $9.76 is a little more than twice Smart Touch Learning's 2018 EPS. Therefore, Smart Touch Learning needs to work on continuing to increase EPS by increasing its net income so that it is more competitive with other companies in its industry.

Evaluating Stock as an Investment

Investors purchase stock to earn a return on their investment. This return consists of two parts: (1) gains (or losses) from selling the stock at a price above (or below) purchase price and (2) dividends. The ratios we examine in this section help analysts evaluate stock investments.

Price/Earnings Ratio

The **price/earnings ratio** is the ratio of the market price of a share of common stock to the company's earnings per share. The price/earnings ratio shows the market price of $1 of earnings. This ratio, abbreviated P/E, appears in many print or online stock listings and measures the value that the stock market places on a company's earnings.

Calculations for the P/E ratios of Smart Touch Learning follow. These market prices of common stock for real companies can be obtained from a financial Web site, a stockbroker, or the company's Web site. The market price for Smart Touch Learning's common stock was $60 at the end of 2018 and $35 at the end of 2017. The earnings per share values were calculated immediately before the P/E ratio.

Price/Earnings Ratio
The ratio of the market price of a share of common stock to the company's earnings per share. Measures the value that the stock market places on $1 of a company's earnings. Market price per share of common stock / Earnings per share.

$$\text{Price/earnings ratio} = \frac{\text{Market price per share of common stock}}{\text{Earnings per share}}$$

$$2018{:}\ \frac{\$60 \text{ per share}}{\$4.80 \text{ per share}} = 12.50$$

$$2017{:}\ \frac{\$35 \text{ per share}}{\$2.60 \text{ per share}} = 13.46$$

$$\text{Industry average} = 17.79$$

Smart Touch Learning's P/E ratio for 2018 of 12.50 means that the company's stock is selling at 12.5 times one year's earnings. Smart Touch Learning would like to see this ratio increase in future years in order to be more in line with the industry average P/E of 17.79.

Dividend Yield

Dividend yield is the ratio of annual dividends per share to the stock's market price per share. This ratio measures the percentage of a stock's market value that is returned annually as dividends to shareholders. *Preferred* stockholders, who invest primarily to receive dividends, pay special attention to dividend yield.

Dividend Yield
Ratio of annual dividends per share of stock to the stock's market price per share. Measures the percentage of a stock's market value that is returned annually as dividends to stockholders. Annual dividend per share / Market price per share.

Assume Smart Touch Learning paid annual cash dividends of $1.20 per share of common stock in 2018 and $1.00 in 2017. As noted previously, market prices of the company's common stock were $60 in 2018 and $35 in 2017. The firm's dividend yields on common stock follow:

$$\text{Dividend yield} = \frac{\text{Annual dividend per share}}{\text{Market price per share}}$$

$$\text{2018: } \frac{\$1.20 \text{ per share}}{\$60 \text{ per share}} = 0.020 = 2.0\%$$

$$\text{2017: } \frac{\$1.00 \text{ per share}}{\$35 \text{ per share}} = 0.029 = 2.9\%$$

$$\text{Industry average} = 3.6\%$$

In this calculation, we are determining the dividend yield for common stock. Dividend yield can also be calculated for preferred stock.

An investor who buys Smart Touch Learning's common stock for $60 can expect to receive 2.0% of the investment annually in the form of cash dividends. The industry, however, is paying out 3.6% annually. An investor might be willing to accept lower dividends (cash now) if the stock's market price is growing (cash later when the stock is sold).

Dividend Payout

Dividend Payout
The ratio of dividends declared per common share relative to the earnings per share of the company. Annual dividend per share / Earnings per share.

Dividend payout is the ratio of annual dividends declared per common share relative to the earnings per share of the company. This ratio measures the percentage of earnings paid annually to common shareholders as cash dividends.

Recall that Smart Touch Learning paid annual cash dividends of $1.20 per share of common stock in 2018 and $1.00 in 2017. Earnings per share were calculated as $4.80 per share for 2018 and $2.60 for 2017. So, Smart Touch Learning's dividend payout yields are as follows:

$$\text{Dividend payout} = \frac{\text{Annual dividend per share}}{\text{Earnings per share}}$$

$$\text{2018: } \frac{\$1.20 \text{ per share}}{\$4.80 \text{ per share}} = 0.25 = 25\%$$

$$\text{2017: } \frac{\$1.00 \text{ per share}}{\$2.60 \text{ per share}} = 0.38 = 38\%$$

$$\text{Industry average} = 63\%$$

Smart Touch Learning's dividend payout ratios of 25% in 2018 and 38% in 2017 are less than the industry average of 63%. Smart Touch Learning, being a fairly new company, might be retaining more of its earnings for growth and expansion. An investor who buys

Smart Touch Learning's common stock may predict annual cash dividends to be about 25% of earnings, based on the 2018 dividend payout ratio. This investor would want to see higher market prices and higher asset turnover for Smart Touch Learning in the future for Smart Touch Learning to stay competitive.

Red Flags in Financial Statement Analyses

Analysts look for *red flags* in financial statements that may signal financial trouble. Recent accounting scandals highlight the importance of these red flags. The following conditions may reveal that the company is too risky:

- **Movement of sales, merchandise inventory, and receivables.** Sales, merchandise inventory, and receivables generally move together. Increased sales lead to higher receivables and may require more merchandise inventory (or higher inventory turnover) to meet demand. Unexpected or inconsistent movements among sales, merchandise inventory, and receivables make the financial statements look suspect.
- **Earnings problems.** Has net income decreased significantly for several years in a row? Did the company report net income in previous years but now is reporting net loss? Most companies cannot survive losses year after year.
- **Decreased cash flow.** Cash flow validates net income. Is net cash flow from operating activities consistently lower than net income? If so, the company is in trouble. Are the sales of plant assets a major source of cash? If so, the company may face a cash shortage.
- **Too much debt.** How does the company's debt ratio compare to that of major competitors? If the debt ratio is too high, the company may be unable to pay its debts.
- **Inability to collect receivables.** Are days' sales in receivables growing faster than for competitors? If so, a cash shortage may be looming.
- **Buildup of merchandise inventories.** Is inventory turnover too slow? If so, the company may be unable to sell goods, or it may be overstating merchandise inventory.

Do any of these red flags apply to Smart Touch Learning from the analyses we did in the chapter? Although the financial statements depict a strong and growing company, the analysis pointed out several areas of weakness for Smart Touch Learning that include low inventory turnover, low accounts receivable turnover, low gross profit margin, low times interest earned, low asset turnover, and low earnings per share. Smart Touch Learning should continue to carefully monitor its financial statements as it continues to grow. Exhibit 15-8 (on the next page) summarizes the financial ratios that you have learned in this chapter.

Exhibit 15-8 Using Ratios in Financial Statement Analysis

Ratio	Computation	Information Provided
Evaluating the ability to pay current liabilities:		
Working capital	Current assets − Current liabilities	A business's ability to meet its short-term obligations with its current assets.
Current ratio	$\frac{\text{Total current assets}}{\text{Total current liabilities}}$	The company's ability to pay current liabilities from current assets.
Cash ratio	$\frac{\text{Cash} + \text{Cash equivalents}}{\text{Total current liabilities}}$	The company's ability to pay current liabilities from cash and cash equivalents.
Acid-test ratio	$\frac{\text{Cash including cash equivalents} + \text{Short-term investments} + \text{Net current receivables}}{\text{Total current liabilities}}$	The company's ability to pay all its current liabilities if they came due immediately.
Evaluating the ability to sell merchandise inventory and collect receivables:		
Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average merchandise inventory}}$	The number of times a company sells its average level of merchandise inventory during a period.
Days' sales in inventory	$\frac{\text{365 days}}{\text{Inventory turnover}}$	The average number of days that inventory is held by a company.
Gross profit percentage	$\frac{\text{Gross profit}}{\text{Net sales revenue}}$	The profitability of each sales dollar above the cost of goods sold.
Accounts receivable turnover ratio	$\frac{\text{Net credit sales}}{\text{Average net accounts receivable}}$	The number of times the company collects the average receivables balance in a year.
Days' sales in receivables	$\frac{\text{365 days}}{\text{Accounts receivable turnover ratio}}$	The number of days' sales it takes to collect the average level of receivables.

Exhibit 15-8 | **Continued**

Ratio	Computation	Information Provided
Evaluating the ability to pay long-term debt:		
Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$	The proportion of assets financed with debt.
Debt to equity ratio	$\frac{\text{Total liabilities}}{\text{Total equity}}$	The proportion of total liabilities relative to total equity.
Times-interest-earned ratio	$\frac{\text{Net income} + \text{Income tax expense} + \text{Interest expense}}{\text{Interest expense}}$	A business's ability to pay interest expense.
Evaluating profitability:		
Profit margin ratio	$\frac{\text{Net income}}{\text{Net sales}}$	How much net income is earned on every dollar of net sales.
Rate of return on total assets	$\frac{\text{Net income} + \text{Interest expense}}{\text{Average total assets}}$	The success a company has in using its assets to earn income.
Asset turnover ratio	$\frac{\text{Net sales}}{\text{Average total assets}}$	How efficiently a business uses its average total assets to generate sales.
Rate of return on common stockholders' equity	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common stockholders' equity}}$	The relationship between net income available to common stockholders and their average common equity invested in the company.
Earnings per share	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average number of common shares outstanding}}$	Amount of a company's net income (loss) for each share of its outstanding common stock.
Evaluating stock as an investment:		
Price/earnings ratio	$\frac{\text{Market price per share of common stock}}{\text{Earnings per share}}$	The value the stock market places on \$1 of a company's earnings.
Dividend yield	$\frac{\text{Annual dividend per share}}{\text{Market price per share}}$	The percentage of a stock's market value that is returned annually as dividends to stockholders.
Dividend payout	$\frac{\text{Annual dividend per share}}{\text{Earnings per share}}$	Ratio of dividends declared per common share relative to the earnings per share of the company.

Try It!

The financial statements of Ion Corporation include the following items:

	Current Year	Preceding Year
Balance Sheet:		
Cash	$ 6,000	$ 8,000
Short-term Investments	4,400	10,700
Net Accounts Receivable	21,600	29,200
Merchandise Inventory	30,800	27,600
Prepaid Expenses	6,000	3,600
Total Current Assets	68,800	79,100
Total Current Liabilities	53,200	37,200
Income Statement:		
Net Sales Revenue	$ 184,800	
Cost of Goods Sold	126,000	

Compute the following ratios for the current year:

7. Current ratio
8. Acid-test ratio
9. Inventory turnover
10. Gross profit percentage

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S15-6 through S15-12. MyAccountingLab

APPENDIX 15A: The Corporate Income Statement

HOW IS THE COMPLETE CORPORATE INCOME STATEMENT PREPARED?

Learning Objective 5
Complete a corporate income statement including earnings per share

A corporation's income statement includes some unique items that do not often apply to smaller businesses. These unique items are listed after determining the corporation's income from continuing operations. We will review the fictitious company Kevin's Vintage Guitars, Inc.'s income statement for year ended December 31, 2016, shown in Exhibit 15A-1, to illustrate these items.

Exhibit 15A-1 | **Kevin's Vintage Guitars, Inc.—Income Statement**

KEVIN'S VINTAGE GUITARS, INC.
Income Statement
Year Ended December 31, 2016

Net Sales	$ 500,000
Cost of Goods Sold	240,000
Gross Profit	260,000
Operating Expenses	181,000
Operating Income	79,000
Other Revenues and (Expenses):	
Gain on Sale of Equipment	11,000
Income Before Income Taxes	90,000
Income Tax Expense	36,000
Income from Continuing Operations	54,000
Discontinued Operations (less applicable tax of $14,000)	21,000
Income Before Extraordinary Items	75,000
Extraordinary Loss (less applicable tax saving of $8,000)	(12,000)
Net Income	**$ 63,000**
Earnings per Share of Common Stock (20,000 shares outstanding):	
Income from Continuing Operations	$ 2.70
Income from Discontinued Operations	1.05
Income Before Extraordinary Items	3.75
Extraordinary Loss	(0.60)
Net Income	**$ 3.15**

Continuing Operations

Special Items

Earnings per Share

Continuing Operations

In Exhibit 15A-1, the first section reports continuing operations. This part of the business should continue from period to period. Income from continuing operations, therefore, helps investors make predictions about future earnings. We may use this information to predict that Kevin's Vintage Guitars, Inc. may earn approximately $54,000 next year.

The continuing operations of Kevin's Vintage Guitars, Inc. include two items that warrant explanation:

- Kevin's Vintage Guitars had a gain on the sale of equipment, which is outside the company's core business of selling vintage guitars. This is why the gain is reported in the "other" category—separately from Kevin's Vintage Guitars's operating income.
- Income tax expense of $36,000 is subtracted to arrive at income from continuing operations. Kevin's Vintage Guitars's income tax rate is 40% ($90,000 × 0.40 = $36,000).

After continuing operations, an income statement may include two distinctly different gains and losses: discontinued operations and extraordinary items.

Discontinued Operations

Most corporations engage in several lines of business. For example, General Motors Company is best known for its automobiles, but it also has a financing company and leasing subsidiary called General Motors Financial Company, Inc.

Each identifiable division of a company is called a segment of the business. A company may sell a segment of its business. For example, General Motors Company sold its financing company (GMAC) but continued its automobile segment. The disposal of the financing segment would be reported as discontinued operations for General Motors Company.

Financial analysts are always keeping tabs on companies they follow and predict companies' net income. Most analysts do not include the results of discontinued operations in financial analysis because the discontinued segments will not be around in the future. The income statement reports information on the segments that have been sold under the heading Discontinued Operations. In our example, income from discontinued operations of $35,000 is taxed at 40% and is reported as shown in Exhibit 15A-1. A loss on discontinued operations is reported similarly, but with a subtraction for the income tax *savings* on the loss (the tax savings reduces the loss).

Gains and losses on the normal sale of plant assets are *not* reported as discontinued operations. Instead, they are reported as "Other Revenues and (Expenses)" among continuing operations because companies dispose of old plant assets and equipment more frequently than business segments.

Extraordinary Items

Extraordinary gains and losses, also called *extraordinary items*, are both unusual and infrequent. GAAP defines *infrequent* as an event that is not expected to recur in the foreseeable future, considering the environment in which the company operates. Losses from natural disasters (floods, earthquakes, and tornadoes) and the taking of company assets by a foreign government (expropriation) could be considered to be extraordinary items. They are reported separately from continuing operations because of their infrequent and unusual nature.

Extraordinary items are reported along with their income tax effect. During 2016, Kevin's Vintage Guitars lost $20,000 of inventory in a flood. This flood loss reduced both Kevin's Vintage Guitars's income and its income tax. The tax effect decreases the net amount of Kevin's Vintage Guitars's loss the same way income tax reduces net income. An extraordinary loss can be reported along with its tax effect, as follows:

Extraordinary Flood Loss	$ (20,000)
Less: Income Tax Savings ($20,000 × 40%)	8,000
Extraordinary Flood Loss, Net of Tax	$ (12,000)

Trace this item to the income statement in Exhibit 15A-1. An extraordinary gain is reported the same as a loss—net of the income tax effect. The following items do *not* qualify as extraordinary:

- Gains and losses on the sale of plant assets
- Losses due to lawsuits
- Losses due to employee labor strikes
- Natural disasters that occur frequently in the area (such as hurricanes in Florida)

These gains and losses fall outside the business's central operations, so they are reported on the income statement as other gains and losses, but they aren't extraordinary. One example for Kevin's Vintage Guitars is the gain on sale of equipment reported in the Other Revenues and (Expenses) section, as part of income from continuing operations in Exhibit 15A-1.

Earnings per Share

The final segment of a corporate income statement reports the company's earnings per share, abbreviated as EPS. A company that reports a discontinued operation or an extraordinary item must report earnings per share for each of these line items either on the face of the income statement (as shown in Exhibit 15A-1) or in the notes to the financial statements.

Try It!

11A. Rocky Corporation's accounting records include the following items, listed in no particular order, at December 31, 2016:

Other Revenues and (Expenses)	$ (6,000)	Extraordinary Loss	$ 2,800
Net Sales	70,800	Cost of Goods Sold	29,200
Gain on Discontinued Operations	4,800	Operating Expenses	22,000

The income tax rate for Rocky Corporation is 30%. Prepare Rocky's income statement for the year ended December 31, 2016. Omit earnings per share. Use a multi-step format.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises S15A-13 and S15A-14. MyAccountingLab

REVIEW

> Things You Should Know

1. How are financial statements used to analyze a business?

- There are three main ways to analyze financial statements:
  - Horizontal analysis
  - Vertical analysis
  - Ratio analysis
- Annual reports provide information about a company's financial condition and include the following:
  - Management's discussion and analysis of financial condition and results of operations (MD&A)
  - Report of independent registered public accounting firm
  - Financial statements
  - Notes to the financial statements

2. How do we use horizontal analysis to analyze a business?

- Horizontal analysis is the study of percentage changes in comparative financial statements. It compares one year to the next. (Dollar amount of change / Base period amount) × 100.
- Trend analysis is a form of horizontal analysis in which percentages are computed by selecting a base year as 100% and expressing the amounts for following periods as a percentage of the base period amount. (Any period amount / Base period amount) × 100.

3. How do we use vertical analysis to analyze a business?

- Vertical analysis reveals the relationship of each statement item to its base amount, which is the 100% figure. (Specific item / Base amount) × 100.
  - For the income statement, net sales is the base.
  - For the balance sheet, total assets is the base.
- Common-size statements are financial statements that report only percentages—the same percentages that appear in vertical analysis.
- Benchmarking is the practice of comparing a company with other leading companies.

4. How do we use ratios to analyze a business?

- Ratios can be used to evaluate a company's:
  - ability to pay current liabilities
  - ability to sell merchandise inventory and collect receivables
  - ability to pay long-term debt
  - profitability
  - stock as an investment
- Exhibit 15-8 summarizes common ratios that can be used to analyze a business.

5. How is the complete corporate income statement prepared? (Appendix 15A)

- A corporation's income statement includes the following unique items listed after determining the calculation for income for continuing operations:
  - Discontinued operations—a segment of a business that has been discontinued
  - Extraordinary items—items that are both unusual and infrequent
- Earnings per share must be reported either on the face of the income statement or in the notes to the financial statements.

> Summary Problem 15-1

Kimball Corporation makes iPod covers and has the following comparative income statement for years ended December 31, 2017 and 2016:

KIMBALL CORPORATION
Income Statement
Years Ended December 31, 2017 and 2016

	2017	**2016**
Revenues:		
Net Sales	$ 300,000	$ 250,000
Other Revenues	0	1,000
Total Revenues	300,000	251,000
Expenses:		
Cost of Goods Sold	214,200	170,000
Engineering, Selling, and Administrative Expenses	54,000	48,000
Interest Expense	6,000	5,000
Income Tax Expense	9,000	3,000
Other Expenses	2,700	0
Total Expenses	285,900	226,000
Net Income	**$ 14,100**	**$ 25,000**

Requirements

Perform a horizontal analysis and a vertical analysis of Kimball Corporation. State whether 2017 was a good year or a bad year, and give your reasons.

> Solution

KIMBALL CORPORATION
Income Statement
Years Ended December 31, 2017 and 2016

			Increase (Decrease)	
	2017	**2016**	**Amount**	**Percentage**
Revenues:				
Net Sales	$ 300,000	$ 250,000	$ 50,000	20.0%
Other Revenues	0	1,000	(1,000)	—
Total Revenues	300,000	251,000	49,000	19.5
Expenses:				
Cost of Goods Sold	214,200	170,000	44,200	26.0
Engineering, Selling, and Administrative Expenses	54,000	48,000	6,000	12.5
Interest Expense	6,000	5,000	1,000	20.0
Income Tax Expense	9,000	3,000	6,000	200.0
Other Expenses	2,700	0	2,700	—
Total Expenses	285,900	226,000	59,900	26.5
Net Income	**$ 14,100**	**$ 25,000**	**$ (10,900)**	**(43.6)%**

The horizontal analysis shows that net sales increased 20.0%. Total expenses increased by 26.5%, and net income decreased 43.6%. So, even though Kimball's net sales increased, the company's expenses increased by a larger percentage, netting an overall 43.6% reduction in net income between the years. That indicates that 2017 was a bad year in comparison to 2016. This analysis identifies areas in which management should review more data. For example, cost of goods sold increased 26.0%. Managers would want to know why this increase occurred to determine whether the company can implement cost-saving strategies (such as purchasing from other, lower-cost vendors).

KIMBALL CORPORATION
Income Statement
Years Ended December 31, 2017 and 2016

	2017	**Percent**	**2016**	**Percent**
Revenues:				
Net Sales	$ 300,000	100.0%	$ 250,000	100.0%
Other Revenues	0	0.0	1,000	0.4
Total Revenues	300,000	100.0	251,000	100.4
Expenses:				
Cost of Goods Sold	214,200	71.4	170,000	68.0
Engineering, Selling, and Administrative Expenses	54,000	18.0	48,000	19.2
Interest Expense	6,000	2.0	5,000	2.0
Income Tax Expense	9,000	3.0	3,000	1.2
Other Expenses	2,700	0.9	0	0
Total Expenses	285,900	95.3	226,000	90.4
Net Income	**$ 14,100**	**4.7%**	**$ 25,000**	**10.0%**

The vertical analysis shows changes in the line items as percentages of net sales. A few notable items are:

- Cost of Goods Sold increased from 68.0% to 71.4%;
- Engineering, Selling, and Administrative Expenses decreased from 19.2% to 18.0%.

These two items are Kimball's largest dollar expenses, so their percentage changes are important. This indicates that cost controls need to be improved, especially for COGS.

The 2017 net income declined to 4.7% of sales, compared with 10.0% the preceding year. Kimball's increase in cost of goods sold is the biggest factor in the overall decrease in net income as a percentage of sales. The horizontal analysis showed that although net sales increased 20% from 2016 to 2017, the amount of each of those sales dollars resulting in net income decreased.

> Summary Problem 15-2

JAVA, INC.
Four-Year Selected Financial Data
Years Ended January 31, 2017–2014

Operating Results:	**2017**	**2016**	**2015**	**2014**
Net Sales	$ 13,848	$ 13,673	$ 11,635	$ 9,054
Cost of Goods Sold	9,704	8,599	6,775	5,318
Interest Expense	109	75	45	46
Income from Operations	338	1,455	1,817	1,333
Income Tax Expense	100	263	338	247
Net Income (Net Loss)	(8)	877	1,127	824
Cash Dividends	76	75	76	77
Financial Position:				
Merchandise Inventory	1,677	1,904	1,462	1,056
Total Assets	7,591	7,012	5,189	3,963
Current Ratio	1.48:1	0.95:1	1.25:1	1.20:1
Stockholders' Equity	3,010	2,928	2,630	1,574
Average Number of Shares of Common Stock Outstanding	860	879	895	576

Requirements

Using the financial data presented above, compute the following ratios and evaluate Java's results for 2017–2015:

1. Profit margin ratio
2. Earnings per share
3. Inventory turnover
4. Times-interest-earned ratio
5. Rate of return on common stockholders' equity
6. Gross profit percentage

> Solution

	2017	2016	2015
1. Profit margin ratio	$\frac{\$(8)}{\$13{,}848} = (0.06\%)$	$\frac{\$877}{\$13{,}673} = 6.4\%$	$\frac{\$1{,}127}{\$11{,}635} = 9.7\%$
2. Earnings per share	$\frac{\$(8)}{860 \text{ shares}} = \$(0.01) \text{ per share}$	$\frac{\$877}{879 \text{ shares}} = \$1.00 \text{ per share}$	$\frac{\$1{,}127}{895 \text{ shares}} = \$1.26 \text{ per share}$
3. Inventory turnover	$\frac{\$9{,}704}{(\$1{,}904 + \$1{,}677)/2} = 5.4 \text{ times}$	$\frac{\$8{,}599}{(\$1{,}462 + \$1{,}904)/2} = 5.1 \text{ times}$	$\frac{\$6{,}775}{(\$1{,}056 + \$1{,}462)/2} = 5.4 \text{ times}$
4. Times-interest-earned ratio	$\frac{[\$(8) + \$100 + \$109]}{\$109} = 1.8 \text{ times}$	$\frac{(\$877 + \$263 + \$75)}{\$75} = 16.2 \text{ times}$	$\frac{(\$1{,}127 + \$338 + \$45)}{\$45} = 33.6 \text{ times}$
5. Rate of return on common stockholders' equity	$\frac{\$(8)}{(\$2{,}928 + \$3{,}010)/2} = (0.3\%)$	$\frac{\$877}{(\$2{,}630 + \$2{,}928)/2} = 31.6\%$	$\frac{\$1{,}127}{(\$1{,}574 + \$2{,}630)/2} = 53.6\%$
6. Gross profit percentage	$\frac{(\$13{,}848 - \$9{,}704)}{\$13{,}848} = 29.9\%$	$\frac{(\$13{,}673 - \$8{,}599)}{\$13{,}673} = 37.1\%$	$\frac{(\$11{,}635 - \$6{,}775)}{\$11{,}635} = 41.8\%$

Evaluation: During this period, Java's operating results deteriorated on all these measures except inventory turnover. The times-interest-earned ratio and rate of return on common stockholders' equity percentages are down sharply. From these data, it is clear that Java could sell its coffee, but not at the markups the company enjoyed in the past. The final result, in 2017, was a net loss for the year.

> Key Terms

Accounts Receivable Turnover Ratio (p. 805)
Acid-Test Ratio (p. 803)
Annual Report (p. 790)
Asset Turnover Ratio (p. 809)
Benchmarking (p. 799)
Cash Ratio (p. 802)
Common-Size Statement (p. 798)
Current Ratio (p. 802)
Days' Sales in Inventory (p. 804)
Days' Sales in Receivables (p. 806)
Debt Ratio (p. 806)
Debt to Equity Ratio (p. 807)
Dividend Payout (p. 812)
Dividend Yield (p. 811)
Dollar Value Bias (p. 798)
Earnings per Share (EPS) (p. 810)
Gross Profit Percentage (p. 805)
Horizontal Analysis (p. 792)
Inventory Turnover (p. 804)
Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) (p. 790)
Price/Earnings Ratio (p. 811)
Profit Margin Ratio (p. 808)
Rate of Return on Common Stockholders' Equity (p. 809)
Rate of Return on Total Assets (p. 808)
Times-Interest-Earned Ratio (p. 807)
Trading on the Equity (p. 810)
Trend Analysis (p. 794)
Vertical Analysis (p. 796)
Working Capital (p. 801)

> Quick Check

Liberty Corporation reported the following financial statements:

LIBERTY CORPORATION
Comparative Balance Sheet
December 31, 2017 and 2016

	2017	2016
Assets		
Current Assets:		
Cash and Cash Equivalents	$ 2,450	$ 2,094
Accounts Receivable	1,813	1,611
Merchandise Inventory	1,324	1,060
Prepaid Expenses	1,709	2,120
Total Current Assets	7,296	6,885
Other Assets	18,500	15,737
Total Assets	**$ 25,796**	**$ 22,622**
Liabilities		
Current Liabilities	$ 7,230	$ 8,467
Long-term Liabilities	4,798	3,792
Total Liabilities	12,028	12,259
Stockholders' Equity		
Common Stock, no par	6,568	4,363
Retained Earnings	7,200	6,000
Total Stockholders' Equity	13,768	10,363
Total Liabilities and Stockholders' Equity	**$ 25,796**	**$ 22,622**

LIBERTY CORPORATION
Income Statement
Year Ended December 31, 2017

Net Sales	$ 20,941
Cost of Goods Sold	7,055
Gross Profit	13,886
Operating Expenses	7,065
Operating Income	6,821
Interest Expense	210
Income Before Income Taxes	6,611
Income Tax Expense	2,563
Net Income	**$ 4,048**

Learning Objective 1

1. What part of the Liberty's annual report is written by the company and could present a biased view of financial conditions and results?

   a. Balance Sheet
   b. Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A)
   c. Auditor's Report
   d. Income Statement

Learning Objective 2

2. Horizontal analysis of Liberty's balance sheet for 2017 would report

   a. Cash as 9.50% of total assets.
   b. a 17% increase in Cash and Cash Equivalents.
   c. a current ratio of 1.01.
   d. inventory turnover of 6 times.

Learning Objective 3

3. Vertical analysis of Liberty's balance sheet for 2017 would report

   a. Cash as 9.50% of total assets.
   b. inventory turnover of 6 times.
   c. a current ratio of 1.01.
   d. a 17% increase in Cash.

Learning Objective 4

4. Which statement best describes Liberty's acid-test ratio for 2017?

   a. Greater than 1
   b. Equal to 1
   c. Less than 1
   d. None of the above

Learning Objective 4

5. Liberty's inventory turnover during 2017 was (amounts rounded)

   a. 6 times.
   b. 7 times.
   c. 8 times.
   d. not determinable from the data given.

Learning Objective 4

6. Assume all sales are on credit. During 2017, Liberty's days' sales in receivables ratio was (amounts rounded)

   a. 34 days. **b.** 30 days. **c.** 32 days. **d.** 28 days.

Learning Objective 4

7. Which measure expresses Liberty's times-interest-earned ratio? (amounts rounded)

   a. 54.7% **b.** 19 times **c.** 34.5% **d.** 32 times

Learning Objective 4

8. Liberty's rate of return on common stockholders' equity can be described as

   a. weak. **b.** normal. **c.** strong. **d.** average.

Learning Objective 4

9. The company has 2,500 shares of common stock outstanding. What is Liberty's earnings per share?

   a. $1.62 **b.** $1.75 **c.** $2.73 **d.** 2.63 times

Learning Objective 5
Appendix 15A

10A. In order for an item to be reported in the extraordinary items section of the income statement, it must be

   a. unusual.
   b. infrequent.
   c. unusual or infrequent.
   d. unusual and infrequent.

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What are the three main ways to analyze financial statements?
2. What is an annual report? Briefly describe the key parts of the annual report.
3. What is horizontal analysis, and how is a percentage change computed?
4. What is trend analysis, and how does it differ from horizontal analysis?
5. What is vertical analysis? What item is used as the base for the income statement? What item is used as the base for the balance sheet?
6. Describe a common-size statement and how it might be helpful in evaluating a company.
7. What is benchmarking, and what are the two main types of benchmarks in financial statement analysis?
8. Briefly describe the ratios that can be used to evaluate a company's ability to pay current liabilities.
9. Briefly describe the ratios that can be used to evaluate a company's ability to sell merchandise inventory and collect receivables.
10. Briefly describe the ratios that can be used to evaluate a company's ability to pay long-term debt.
11. Briefly describe the ratios that can be used to evaluate a company's profitability.
12. Briefly describe the ratios that can be used to evaluate a company's stock as an investment.
13. What are some common red flags in financial statement analysis?

14A. What is reported in the discontinued operations section of the income statement?

15A. Describe the types of items that would be reported in the extraordinary items section of the income statement.

> Short Exercises

S15-1 Explaining financial statements

Learning Objective 1

Caleb King is interested in investing in Orange Corporation. What types of tools should Caleb use to evaluate the company?

S15-2 Performing horizontal analysis

Learning Objective 2

McAllister Corp. reported the following on its comparative income statement:

(In millions)	2017	2016	2015
Revenue	$ 9,780	$ 9,675	$ 9,075
Cost of Goods Sold	6,000	5,975	5,900

Prepare a horizontal analysis of revenues and gross profit—both in dollar amounts and in percentages—for 2017 and 2016.

Learning Objective 2

S15-3 Calculating trend analysis

Muscateer Corp. reported the following revenues and net income amounts:

(In millions)	2017	2016	2015	2014
Revenue	$ 9,610	$ 9,355	$ 9,050	$ 8,950
Net Income	7,290	6,790	5,020	4,300

Requirements

1. Calculate Muscateer's trend analysis for revenues and net income. Use 2014 as the base year, and round to the nearest percent.
2. Which measure increased faster during 2015–2017?

Learning Objective 3

S15-4 Performing vertical analysis

Hoosier Optical Company reported the following amounts on its balance sheet at December 31, 2016 and 2015:

	2016	2015
Cash and Receivables	$ 77,825	$ 70,200
Merchandise Inventory	55,825	52,780
Property, Plant, and Equipment, Net	141,350	137,020
Total Assets	$ 275,000	$ 260,000

Prepare a vertical analysis of Hoosier assets for 2016 and 2015.

Learning Objective 3

S15-5 Preparing common-size income statement

Data for Martinez, Inc. and Rosado Corp. follow:

	Martinez	Rosado
Net Sales	$ 10,000	$ 20,000
Cost of Goods Sold	6,210	14,540
Other Expenses	3,210	4,480
Net Income	$ 580	$ 980

Requirements

1. Prepare common-size income statements.
2. Which company earns more net income?
3. Which company's net income is a higher percentage of its net sales?

Use the following information for Short Exercises S15-6 through S15-10.

Accel's Companies, a home improvement store chain, reported the following summarized figures:

ACCEL'S COMPANIES
Income Statement
Years Ended May 31, 2016 and 2015

	2016	2015
Net Sales	$ 57,200,000	$ 41,100,000
Cost of Goods Sold	20,600,000	29,300,000
Interest Expense	700,000	630,000
All Other Expenses	6,900,000	8,400,000
Net Income	**$ 29,000,000**	**$ 2,770,000**

ACCEL'S COMPANIES
Balance Sheet
May 31, 2016 and 2015

Assets			**Liabilities**		
	2016	**2015**		**2016**	**2015**
Cash	$ 2,200,000	$ 1,800,000	Total Current Liabilities	$ 24,000,000	$ 12,900,000
Short-term Investments	26,000,000	10,000,000	Long-term Liabilities	13,400,000	10,800,000
Accounts Receivable	7,200,000	5,400,000	Total Liabilities	37,400,000	23,700,000
Merchandise Inventory	7,100,000	8,200,000	**Stockholders' Equity**		
Other Current Assets	9,000,000	1,800,000	Common Stock	13,000,000	13,000,000
Total Current Assets	51,500,000	27,200,000	Retained Earnings	33,100,000	18,500,000
All Other Assets	32,000,000	28,000,000	Total Equity	46,100,000	31,500,000
Total Assets	**$ 83,500,000**	**$ 55,200,000**	Total Liabilities and Equity	**$ 83,500,000**	**$ 55,200,000**

Accel's has 100,000 common shares outstanding during 2016.

S15-6 Evaluating current ratio

Learning Objective 4

Requirements

1. Compute Accel's Companies' current ratio at May 31, 2016 and 2015.
2. Did Accel's Companies' current ratio improve, deteriorate, or hold steady during 2016?

Learning Objective 4

S15-7 Computing inventory, gross profit, and receivables ratios

Requirements

1. Compute the inventory turnover, days' sales in inventory, and gross profit percentage for Accel's Companies for 2016.
2. Compute days' sales in receivables during 2016. Round dollar amounts to three decimal places. Assume all sales were on account.
3. What do these ratios say about Accel's Companies' ability to sell inventory and collect receivables?

Learning Objective 4

S15-8 Measuring ability to pay liabilities

Requirements

1. Compute the debt ratio and the debt to equity ratio at May 31, 2016, for Accel's Companies.
2. Is Accel's ability to pay its liabilities strong or weak? Explain your reasoning.

Learning Objective 4

S15-9 Measuring profitability

Requirements

1. Compute the profit margin ratio for Accel's Companies for 2016.
2. Compute the rate of return on total assets for 2016.
3. Compute the asset turnover ratio for 2016.
4. Compute the rate of return on common stockholders' equity for 2016.
5. Are these rates of return strong or weak? Explain your reasoning.

Learning Objective 4

S15-10 Computing EPS and P/E ratio

Requirements

1. Compute earnings per share (EPS) for 2016 for Accel's. Round to the nearest cent.
2. Compute Accel's Companies' price/earnings ratio for 2016. The market price per share of Accel's stock is $65.50.
3. What do these results mean when evaluating Accel's Companies' profitability?

Learning Objective 4

S15-11 Using ratios to reconstruct an income statement

Traditional Mills's income statement appears as follows (amounts in thousands):

TRADITIONAL MILLS
Income Statement
Year Ended December 31, 2016

Net Sales	$ 6,900
Cost of Goods Sold	*(a)*
Selling and Administrative Expenses	1,820
Interest Expense	*(b)*
Other Expenses	190
Income Before Income Taxes	1,300
Income Tax Expense	*(c)*
Net Income	*(d)*

Use the following ratio data to complete Traditional Mills' income statement:

1. Inventory turnover was 3.70 (beginning Merchandise Inventory was $790; ending Merchandise Inventory was $750).
2. Profit margin ratio is 0.18.

S15-12 Using ratios to reconstruct a balance sheet

Learning Objective 4

Heritage Mills's balance sheet appears as follows (amounts in thousands):

HERITAGE MILLS
Balance Sheet
December 31, 2016

Assets		**Liabilities**	
Cash	$ 60	Total Current Liabilities	$ 1,800
Accounts Receivables	*(a)*	Long-term Note Payable	*(e)*
Merchandise Inventory	725	Other Long-term Liabilities	770
Prepaid Expenses	*(b)*	Total Liabilities	*(f)*
Total Current Assets	*(c)*		
Plant Assets, Net	*(d)*	**Stockholders' Equity**	
Other Assets	2,000	Stockholders' Equity	2,675
Total Assets	**$ 6,500**	Total Liabilities and Stockholders' Equity	**$ *(g)***

Use the following ratio data to complete Heritage Mills's balance sheet.

a. Current ratio is 0.84.
b. Acid-test ratio is 0.36.

S15A-13 Preparing a corporate income statement

Learning Objective 5
Appendix 15A

TST Corporation's accounting records include the following items, listed in no particular order, at December 31, 2016:

Other Revenues and (Expenses)	$ (10,000)	Extraordinary Loss	$ 16,600
Net Sales	266,000	Cost of Goods Sold	79,000
Gain on Discontinued Operations	34,500	Operating Expenses	65,000

The income tax rate for TST Corporation is 50%.

Prepare TST's income statement for the year ended December 31, 2016. Omit earnings per share. Use the multi-step format.

S15A-14 Reporting earnings per share

Learning Objective 5
Appendix 15A

Return to the TST data in Short Exercise S15A-13. TST had 8,000 shares of common stock outstanding during 2016. TST declared and paid preferred dividends of $4,000 during 2016.

Show how TST reports EPS data on its 2016 income statement.

> Exercises

Learning Objective 2

1. Net Income 35.7%

E15-15 Performing horizontal analysis—income statement

Data for Variline Designs, Inc. follow:

VARILINE DESIGNS, INC.
Comparative Income Statement
Years Ended December 31, 2016 and 2015

	2016	2015
Net Sales Revenue	$ 431,000	$ 373,750
Expenses:		
Cost of Goods Sold	200,000	190,000
Selling and Administrative Expenses	98,000	92,000
Other Expenses	9,150	3,250
Total Expenses	307,150	285,250
Net Income	**$ 123,850**	**$ 88,500**

Requirements

1. Prepare a horizontal analysis of the comparative income statement of Variline Designs, Inc. Round percentage changes to one decimal place.
2. Why did 2016 net income increase by a higher percentage than net sales revenue?

Learning Objective 2

1. 2017 Net Income 166%

E15-16 Computing trend analysis

Midnight Oaks Realty's net revenue and net income for the following five-year period, using 2013 as the base year, follow:

	2017	2016	2015	2014	2013
Net Revenue	$ 1,310,000	$ 1,185,000	$ 1,148,000	$ 1,004,000	$ 1,038,000
Net Income	129,000	117,000	84,000	73,000	76,000

Requirements

1. Compute trend analysis for net revenue and net income. Round to the nearest full percent.
2. Which grew faster during the period, net revenue or net income?

Learning Objective 3

2016 Current Assets: 15.7%

E15-17 Performing vertical analysis of a balance sheet

Tri Designs, Inc. has the following data:

TRI DESIGNS, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015
Assets		
Total Current Assets	$ 54,950	$ 72,250
Property, Plant, and Equipment, Net	250,250	158,950
Other Assets	44,800	57,800
Total Assets	**$ 350,000**	**$ 289,000**
Liabilities		
Total Current Liabilities	$ 49,700	$ 47,685
Long-term Debt	118,300	196,520
Total Liabilities	168,000	244,205
Stockholders' Equity		
Total Stockholders' Equity	182,000	44,795
Total Liabilities and Stockholders' Equity	**$ 350,000**	**$ 289,000**

Perform a vertical analysis of Tri Designs's balance sheet for each year.

Learning Objective 3

1. 2016 Net Income 28.1%

E15-18 Preparing common-size income statements

Refer to the data presented for McCormick Designs, Inc. in Exercise E15-15.

Requirements

1. Prepare a comparative common-size income statement for McCormick Designs, Inc. using the 2016 and 2015 data. Round percentages to one-tenth percent (three decimal places).
2. To an investor, how does 2016 compare with 2015? Explain your reasoning.

Learning Objective 4

2017 Working Capital $200,000

E15-19 Computing working capital changes

Data for Web Enterprises follows:

	2017	2016	2015
Total Current Assets	$ 490,000	$ 360,000	$ 260,000
Total Current Liabilities	235,000	180,000	130,000

Compute the dollar amount of change and the percentage of change in Web Enterprises's working capital each year during 2017 and 2016. What do the calculated changes indicate?

Learning Objective 4

e. 78 days

E15-20 Computing key ratios

The financial statements of Vroom's Natural Foods include the following items:

	Current Year	Preceding Year
Balance Sheet:		
Cash	$ 19,000	$ 31,000
Short-term Investments	11,000	22,000
Net Accounts Receivable	56,000	80,000
Merchandise Inventory	84,000	72,000
Prepaid Expenses	14,000	7,000
Total Current Assets	184,000	212,000
Total Current Liabilities	137,000	83,000
Income Statement:		
Net Credit Sales	$ 470,000	
Cost of Goods Sold	312,000	

Compute the following ratios for the current year:

a. Current ratio

b. Cash ratio

c. Acid-test ratio

d. Inventory turnover

e. Days' sales in inventory

f. Days' sales in receivables

g. Gross profit percentage

Learning Objective 4

d. 2016 0.61

E15-21 Analyzing the ability to pay liabilities

Big Beautiful Photo Shop has asked you to determine whether the company's ability to pay current liabilities and total liabilities improved or deteriorated during 2016. To answer this question, you gather the following data:

	2016	2015
Cash	$ 54,000	$ 47,000
Short-term Investments	33,000	0
Net Accounts Receivable	128,000	116,000
Merchandise Inventory	227,000	282,000
Total Assets	570,000	535,000
Total Current Liabilities	255,000	182,000
Long-term Notes Payable	50,000	52,000
Income from Operations	168,000	173,000
Interest Expense	48,000	43,000

Compute the following ratios for 2016 and 2015, and evaluate the company's ability to pay its current liabilities and total liabilities:

a. Current ratio

b. Cash ratio

c. Acid-test ratio

d. Debt ratio

e. Debt to equity ratio

Learning Objective 4

1. 2017 11.6%

E15-22 Analyzing profitability

McKnight, Inc.'s comparative income statement follows. The 2015 data are given as needed.

McKnight, INC.
Comparative Income Statement
Years Ended December 31, 2017 and 2016

Dollars in thousands	2017	2016	2015
Net Sales	$ 185,000	$ 153,000	
Cost of Goods Sold	96,000	87,000	
Selling and Administrative Expenses	46,500	39,500	
Interest Expense	9,500	10,500	
Income Tax Expense	11,500	9,000	
Net Income	**$ 21,500**	**$ 7,000**	
Additional data:			
Total Assets	$ 200,000	$ 188,000	$ 169,000
Common Stockholders' Equity	92,000	87,500	80,000
Preferred Dividends	2,000	2,000	0
Common Shares Outstanding During the Year	20,000	20,000	10,000

Requirements

1. Calculate the profit margin ratio for 2017 and 2016.
2. Calculate the rate of return on total assets for 2017 and 2016.
3. Calculate the asset turnover ratio for 2017 and 2016.
4. Calculate the rate of return on common stockholders' equity for 2017 and 2016.
5. Calculate the earnings per share for 2017 and 2016.
6. Calculate the 2017 dividend payout on common stock. Assume dividends per share for common stock are equal to $0.75 per share.
7. Did the company's operating performance improve or deteriorate during 2017?

Learning Objective 4

Dividend Yield 2016 1.2%

E15-23 Evaluating a stock as an investment

Data for Johnson State Bank follow:

	2016	2015
Net Income	$ 49,100	$ 47,200
Dividends—Common	18,000	16,000
Dividends—Preferred	15,000	16,000
Total Stockholders' Equity at Year-End (includes 60,000 shares of common stock)	770,000	580,000
Preferred Stock	210,000	220,000
Market Price per Share of Common Stock	$ 19.50	$ 11.00

Evaluate the common stock of Regal State Bank as an investment. Specifically, use the three stock ratios to determine whether the common stock has increased or decreased in attractiveness during the past year.

Learning Objective 4

Total Assets $2,000,000

E15-24 Using ratios to reconstruct a balance sheet

The following data are adapted from the financial statements of Jim's Shops, Inc.:

Total Current Assets	$ 1,054,000
Accumulated Depreciation	1,600,000
Total Liabilities	1,480,000
Preferred Stock	0
Debt Ratio	74%
Current Ratio	1.55

Prepare Jim's condensed balance sheet as of December 31, 2016.

Learning Objective 5
Appendix 15A

Net Income $155,400

E15A-25 Preparing a multi-step income statement

Cloud Photographic Supplies, Inc.'s accounting records include the following for 2016:

Income Tax Saving—Extraordinary Loss	$ 10,400	Sales	$ 575,000
Income Tax Saving—Loss on Discontinued Operations	6,000	Operating Expenses (Including Income Tax)	140,000
Extraordinary Loss	26,000	Cost of Goods Sold	255,000
Loss on Discontinued Operations	15,000		

Prepare Cloud's multi-step income statement for 2016. Omit earnings per share.

Learning Objective 5
Appendix 15A

Net Income $14.25

E15A-26 Computing earnings per share

Falconi Academy Surplus had 55,000 shares of common stock and 5,000 shares of 1%, $10 par value preferred stock outstanding through December 31, 2016. Income from continuing operations for 2016 was $679,750, and loss on discontinued operations (net of income tax saving) was $66,000. Falconi also had an extraordinary gain (net of tax) of $170,500.

Compute Falconi's earnings per share for 2016, starting with income from continuing operations.

> Problems Group A

Learning Objectives 2, 4

2. 2017 15.9%

P15-27A Computing trend analysis and return on common equity

Net sales revenue, net income, and common stockholders' equity for Amaze Mission Corporation, a manufacturer of contact lenses, follow for a four-year period.

	2017	2016	2015	2014
Net Sales Revenue	$ 761,000	$ 709,000	$ 638,000	$ 663,000
Net Income	59,000	36,000	35,000	49,000
Ending Common Stockholders' Equity	376,000	354,000	332,000	296,000

Requirements

1. Compute trend analyses for each item for 2015–2017. Use 2014 as the base year, and round to the nearest whole percent.
2. Compute the rate of return on common stockholders' equity for 2015–2017, rounding to three decimal places.

Learning Objective 2

1. Net Income 10.7%

P15-28A Performing vertical analysis

The Ambrose Department Stores, Inc. chief executive officer (CEO) has asked you to compare the company's profit performance and financial position with the averages for the industry. The CEO has given you the company's income statement and balance sheet as well as the industry average data for retailers.

AMBROSE DEPARTMENT STORES, INC.
Income Statement Compared with Industry Average
Year Ended December 31, 2016

	Ambrose	Industry Average
Net Sales	$ 781,000	100.0%
Cost of Goods Sold	527,956	65.8
Gross Profit	253,044	34.2
Operating Expenses	164,010	19.7
Operating Income	89,034	14.5
Other Expenses	6,248	0.4
Net Income	**$ 82,786**	**14.1%**

AMBROSE DEPARTMENT STORES, INC.
Balance Sheet Compared with Industry Average
December 31, 2016

	Ambrose	Industry Average
Current Assets	$ 310,960	70.9%
Fixed Assets, Net	118,680	23.6
Intangible Assets, Net	7,820	0.8
Other Assets	22,540	4.7
Total Assets	**$ 460,000**	**100.0%**
Current Liabilities	$ 212,520	48.1%
Long-term Liabilities	103,960	16.6
Total Liabilities	316,480	64.7
Stockholders' Equity	143,520	35.3
Total Liabilities and Stockholders' Equity	**$ 460,000**	**100.0%**

Requirements

1. Prepare a vertical analysis for Roost for both its income statement and balance sheet.
2. Compare the company's profit performance and financial position with the average for the industry.

Note: Problem P15-28A must be completed before attempting Problem P15-29A.

Learning Objectives 3, 4

2. Gross Profit Percentage 32.4%

P15-29A Preparing common-size statements, analysis of profitability and financial position, comparison with the industry, and using ratios to evaluate a company

Consider the data for Roost Department Stores presented in Problem P15-28A.

Requirements

1. Prepare a common-size income statement and balance sheet for Ambrose. The first column of each statement should present Ambrose's common-size statement, and the second column, the industry averages.
2. For the profitability analysis, compute Ambrose's (a) gross profit percentage and (b) profit margin ratio. Compare these figures with the industry averages. Is Ambrose's profit performance better or worse than the industry average?
3. For the analysis of financial position, compute Ambrose's (a) current ratio and (b) debt to equity ratio. Compare these ratios with the industry averages. Assume the current ratio industry average is 1.47, and the debt to equity industry average is 1.83. Is Ambrose's financial position better or worse than the industry averages?

Learning Objective 4

1. Current Ratio 1.49

P15-30A Determining the effects of business transactions on selected ratios

Financial statement data of *Off Road Traveler Magazine* include the following items:

Cash	$ 23,000
Accounts Receivable, Net	80,000
Merchandise Inventory	184,000
Total Assets	637,000
Accounts Payable	103,000
Accrued Liabilities	38,000
Short-term Notes Payable	51,000
Long-term Liabilities	224,000
Net Income	74,000
Common Shares Outstanding	50,000

Requirements

1. Compute *Off Road Traveler's* current ratio, debt ratio, and earnings per share. Round all ratios to two decimal places, and use the following format for your answer:

Current Ratio	Debt Ratio	Earnings per Share

2. Compute the three ratios after evaluating the effect of each transaction that follows. Consider each transaction *separately*.
   a. Purchased merchandise inventory of $48,000 on account.
   b. Borrowed $127,000 on a long-term note payable.
   c. Issued 56,000 shares of common stock, receiving cash of $106,000.
   d. Received cash on account, $5,000.

Learning Objective 4

1. 2016 e. 49%

P15-31A Using ratios to evaluate a stock investment

Comparative financial statement data of Dangerfield, Inc. follow:

DANGERFIELD, INC.
Comparative Income Statement
Years Ended December 31, 2016 and 2015

	2016	**2015**
Net Sales	$ 465,000	$ 428,000
Cost of Goods Sold	237,000	214,000
Gross Profit	228,000	214,000
Operating Expenses	138,000	136,000
Income from Operations	90,000	78,000
Interest Expense	10,000	16,000
Income Before Income Tax	80,000	62,000
Income Tax Expense	23,000	25,000
Net Income	**$ 57,000**	**$ 37,000**

DANGERFIELD, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015	2014*
Assets			
Current Assets:			
Cash	$ 94,000	$ 93,000	
Accounts Receivable, Net	107,000	116,000	$ 102,000
Merchandise Inventory	145,000	160,000	210,000
Prepaid Expenses	19,000	8,000	
Total Current Assets	365,000	377,000	
Property, Plant, and Equipment, Net	217,000	178,000	
Total Assets	**$ 582,000**	**$ 555,000**	596,000
Liabilities			
Total Current Liabilities	$ 228,000	$ 242,000	
Long-term Liabilities	114,000	98,000	
Total Liabilities	342,000	340,000	
Stockholders' Equity			
Preferred Stock, 3%	96,000	96,000	
Common Stockholders' Equity, no par	144,000	119,000	91,000
Total Liabilities and Stockholders' Equity	**$ 582,000**	**$ 555,000**	

* Selected 2014 amounts

1. Market price of Dangerfield's common stock: $76.67 at December 31, 2016, and $37.20 at December 31, 2015.
2. Common shares outstanding: 13,000 during 2016 and 11,000 during 2015 and 2014.
3. All sales are on credit.

Requirements

1. Compute the following ratios for 2016 and 2015:
   a. Current ratio
   b. Cash ratio
   c. Times-interest-earned ratio
   d. Inventory turnover
   e. Gross profit percentage
   f. Debt to equity ratio
   g. Rate of return on common stockholders' equity
   h. Earnings per share of common stock
   i. Price/earnings ratio
2. Decide (a) whether Dangerfield's ability to pay debts and to sell inventory improved or deteriorated during 2016 and (b) whether the investment attractiveness of its common stock appears to have increased or decreased.

Learning Objective 4

1. Best Digital e. $4.67

P15-32A Using ratios to decide between two stock investments

Assume that you are purchasing an investment and have decided to invest in a company in the digital phone business. You have narrowed the choice to Best Digital Corp. and Very Zone, Inc. and have assembled the following data.

Selected income statement data for the current year:

	Best Digital	Very Zone
Net Sales (all on credit)	$ 417,925	$ 493,845
Cost of Goods Sold	207,000	259,000
Interest Expense	0	14,000
Net Income	56,000	72,000

Selected balance sheet and market price data at the *end* of the current year:

	Best Digital	Very Zone
Current Assets:		
Cash	$ 23,000	$ 21,000
Short-term Investments	38,000	15,000
Accounts Receivable, Net	37,000	47,000
Merchandise Inventory	65,000	97,000
Prepaid Expenses	22,000	18,000
Total Current Assets	$ 185,000	$ 198,000
Total Assets	$ 261,000	$ 325,000
Total Current Liabilities	100,000	99,000
Total Liabilities	100,000	131,000
Common Stock, $1 par (12,000 shares)	12,000	
$1 par (17,000 shares)		17,000
Total Stockholders' Equity	161,000	194,000
Market Price per Share of Common Stock	$ 70.05	$ 97.52
Dividends Paid per Common Share	$ 0.60	$ 0.40

Selected balance sheet data at the *beginning* of the current year:

	Best Digital	Very Zone
Balance Sheet:		
Accounts Receivable, net	$ 42,000	$ 49,000
Merchandise Inventory	81,000	90,000
Total Assets	258,000	275,000
Common Stock, $1 par (12,000 shares)	12,000	
$1 par (17,000 shares)		17,000

Your strategy is to invest in companies that have low price/earnings ratios but appear to be in good shape financially. Assume that you have analyzed all other factors and that your decision depends on the results of ratio analysis.

Requirements

1. Compute the following ratios for both companies for the current year:
   a. Acid-test ratio
   b. Inventory turnover
   c. Days' sales in receivables
   d. Debt ratio
   e. Earnings per share of common stock
   f. Price/earnings ratio
   g. Dividend payout
2. Decide which company's stock better fits your investment strategy.

P15A-33A Preparing an income statement

Learning Objective 5
Appendix 15A

Net Income $108,600

The following information was taken from the records of Grey Motorsports, Inc. at November 30, 2016:

Selling Expenses	$ 125,000	Common Stock, $5 Par Value, 30,500 shares authorized and issued	$ 152,500
Administrative Expenses	95,000	Preferred Stock, $3 No-Par Value, 5,000 shares issued	250,000
Income from Discontinued Operations	11,000	Income Tax Expense: Continuing Operations	35,000
Cost of Goods Sold	440,000	Income Tax Expense: Income from Discontinued Operations	4,400
Treasury Stock—Common (500 shares)	4,000		
Net Sales Revenue	797,000		

Prepare a multi-step income statement for Grey Motorsports for the fiscal year ended November 30, 2016. Include earnings per share.

> Problems Group B

P15-34B Computing trend analysis and return on common equity

Learning Objectives 2, 4

2. 2016 10.2%

Net sales revenue, net income, and common stockholders' equity for Atkinson Mission Corporation, a manufacturer of contact lenses, follow for a four-year period.

	2017	2016	2015	2014
Net Sales Revenue	$ 763,000	$ 704,000	$ 641,000	$ 661,000
Net Income	57,000	35,000	33,000	43,000
Ending Common Stockholders' Equity	370,000	358,000	330,000	298,000

Requirements

1. Compute trend analyses for each item for 2015–2017. Use 2014 as the base year, and round to the nearest whole percent.
2. Compute the rate of return on common stockholders' equity for 2015–2017, rounding to three decimal places.

Learning Objective 2

1. Net Income 10.9%

P15-35B Performing vertical analysis

The Russell Department Stores, Inc. chief executive officer (CEO) has asked you to compare the company's profit performance and financial position with the averages for the industry. The CEO has given you the company's income statement and balance sheet as well as the industry average data for retailers.

RUSSELL DEPARTMENT STORES, INC.
Income Statement Compared with Industry Average
Year Ended December 31, 2016

	Russell	Industry Average
Net Sales	$ 780,000	100.0%
Cost of Goods Sold	528,060	65.8
Gross Profit	251,940	34.2
Operating Expenses	159,900	19.7
Operating Income	92,040	14.5
Other Expenses	7,020	0.4
Net Income	**$ 85,020**	**14.1%**

RUSSELL DEPARTMENT STORES, INC.
Balance Sheet Compared with Industry Average
December 31, 2016

	Russell	Industry Average
Current Assets	$ 323,520	70.9%
Fixed Assets, Net	124,800	23.6
Intangible Assets, Net	8,160	0.8
Other Assets	23,520	4.7
Total Assets	**$ 480,000**	**100.0%**
Current Liabilities	$ 221,760	48.1%
Long-term Liabilities	108,480	16.6
Total Liabilities	330,240	64.7
Stockholders' Equity	149,760	35.3
Total Liabilities and Stockholders' Equity	**$ 480,000**	**100.0%**

Requirements

1. Prepare a vertical analysis for Russell for both its income statement and balance sheet.
2. Compare the company's profit performance and financial position with the average for the industry.

Note: Problem P15-35B must be completed before attempting Problem P15-36B.

Learning Objectives 3, 4

1. Current Assets 67.4%

P15-36B Preparing common-size statements, analysis of profitability and financial position, comparison with the industry, and using ratios to evaluate a company

Consider the data for Russell Department Stores presented in Problem P15-35B.

Requirements

1. Prepare a common-size income statement and balance sheet for Russell. The first column of each statement should present Russell's common-size statement, and the second column, the industry averages.
2. For the profitability analysis, compute Russell's (a) gross profit percentage and (b) profit margin ratio. Compare these figures with the industry averages. Is Russell's profit performance better or worse than the industry average?
3. For the analysis of financial position, compute Russell's (a) current ratio and (b) debt to equity ratio. Compare these ratios with the industry averages. Assume the current ratio industry average is 1.47, and the debt to equity industry average is 1.83. Is Russell's financial position better or worse than the industry averages?

P15-37B Determining the effects of business transactions on selected ratios

Learning Objective 4

1. Earnings per Share $1.83

Financial statement data of *Yankee Traveler's Magazine* include the following items:

Cash	$ 21,000
Accounts Receivable, Net	82,000
Merchandise Inventory	183,000
Total Assets	634,000
Accounts Payable	102,000
Accrued Liabilities	38,000
Short-term Notes Payable	46,000
Long-term Liabilities	222,000
Net Income	73,000
Common Shares Outstanding	40,000

Requirements

1. Compute *Yankee Traveler*'s current ratio, debt ratio, and earnings per share. Round all ratios to two decimal places, and use the following format for your answer:

Current Ratio	Debt Ratio	Earnings per Share

2. Compute the three ratios after evaluating the effect of each transaction that follows. Consider each transaction *separately*.
   a. Purchased merchandise inventory of $42,000 on account.
   b. Borrowed $123,000 on a long-term note payable.
   c. Issued 4,000 shares of common stock, receiving cash of $106,000.
   d. Received cash on account, $7,000.

P15-38B Using ratios to evaluate a stock investment

Learning Objective 4

1. 2015 d. 1.15

Comparative financial statement data of Canfield, Inc. follow:

CANFIELD, INC.
Comparative Income Statement
Years Ended December 31, 2016 and 2015

	2016	2015
Net Sales	$ 459,000	$ 424,000
Cost of Goods Sold	237,000	215,000
Gross Profit	222,000	209,000
Operating Expenses	137,000	135,000
Income from Operations	85,000	74,000
Interest Expense	12,000	14,000
Income Before Income Tax	73,000	60,000
Income Tax Expense	19,000	25,000
Net Income	**$ 54,000**	**$ 35,000**

CANFIELD, INC.
Comparative Balance Sheet
December 31, 2016 and 2015

	2016	2015	2014*
Assets			
Current Assets:			
Cash	$ 99,000	$ 96,000	
Accounts Receivable, Net	110,000	116,000	$ 101,000
Merchandise Inventory	145,000	163,000	210,000
Prepaid Expenses	12,000	7,000	
Total Current Assets	366,000	382,000	
Property, Plant, and Equipment, Net	219,000	180,000	
Total Assets	**$ 585,000**	**$ 562,000**	598,000
Liabilities			
Total Current Liabilities	$ 223,000	$ 246,000	
Long-term Liabilities	120,000	95,000	
Total Liabilities	343,000	341,000	
Stockholders' Equity			
Preferred Stock, 3%	98,000	98,000	
Common Stockholders' Equity, no par	144,000	123,000	85,000
Total Liabilities and Stockholders' Equity	**$ 585,000**	**$ 562,000**	

* Selected 2014 amounts

1. Market price of Canfield's common stock: $84.32 at December 31, 2016, and $51.75 at December 31, 2015.
2. Common shares outstanding: 10,000 during 2016 and 9,000 during 2015 and 2014.
3. All sales are on credit.

Requirements

1. Compute the following ratios for 2016 and 2015:
    a. Current ratio
    b. Cash ratio
    c. Times-interest-earned ratio
    d. Inventory turnover
    e. Gross profit percentage
    f. Debt to equity ratio
    g. Rate of return on common stockholders' equity
    h. Earnings per share of common stock
    i. Price/earnings ratio
2. Decide (a) whether Canfield's ability to pay debts and to sell inventory improved or deteriorated during 2016 and (b) whether the investment attractiveness of its common stock appears to have increased or decreased.

Learning Objective 4

1c. Red Zone 36 days

P15-39B Using ratios to decide between two stock investments

Assume that you are purchasing an investment and have decided to invest in a company in the digital phone business. You have narrowed the choice to Digital Plus Corp. and Red Zone, Inc. and have assembled the following data.

Selected income statement data for the current year:

	Digital Plus	Red Zone
Net Sales (all on credit)	$ 416,830	$ 497,130
Cost of Goods Sold	207,000	259,000
Interest Expense	0	17,000
Net Income	54,000	76,000

Selected balance sheet and market price data at the *end* of the current year:

	Digital Plus	Red Zone
Current Assets:		
Cash	$ 24,000	$ 15,000
Short-term Investments	37,000	14,000
Accounts Receivable, Net	38,000	46,000
Merchandise Inventory	65,000	99,000
Prepaid Expenses	17,000	14,000
Total Current Assets	$ 181,000	$ 188,000
Total Assets	$ 263,000	$ 324,000
Total Current Liabilities	102,000	95,000
Total Liabilities	102,000	132,000
Common Stock, $1 par (10,000 shares)	10,000	
$2 par (16,000 shares)		32,000
Total Stockholders' Equity	161,000	192,000
Market Price per Share of Common Stock	$ 86.40	$ 104.50
Dividends Paid per Common Share	$ 1.20	$ 1.00

Selected balance sheet data at the *beginning* of the current year:

	Digital Plus	Red Zone
Balance Sheet:		
Accounts Receivable, Net	$ 42,000	$ 51,000
Merchandise Inventory	81,000	89,000
Total Assets	259,000	275,000
Common Stock, $1 par (10,000 shares)	10,000	
$2 par (16,000 shares)		32,000

Your strategy is to invest in companies that have low price/earnings ratios but appear to be in good shape financially. Assume that you have analyzed all other factors and that your decision depends on the results of ratio analysis.

Requirements

1. Compute the following ratios for both companies for the current year:
   - **a.** Acid-test ratio
   - **b.** Inventory turnover
   - **c.** Days' sales in receivables
   - **d.** Debt ratio
   - **e.** Earnings per share of common stock
   - **f.** Price/earnings ratio
   - **g.** Dividend payout
2. Decide which company's stock better fits your investment strategy.

Learning Objective 5
Appendix 15A

Net Income $149,800

P15A-40B Preparing an income statement

The following information was taken from the records of Shepard Motorsports, Inc. at November 30, 2016:

Selling Expenses	$ 150,000	Common Stock, $8 Par Value, 29,500 shares authorized and issued	$ 236,000
Administrative Expenses	95,000	Preferred Stock, $7 No-Par Value, 9,000 shares issued	630,000
Income from Discontinued Operations	7,000	Income Tax Expense: Continuing Operations	45,000
Cost of Goods Sold	425,000	Income Tax Expense: Income from Discontinued Operations	2,800
Treasury Stock—Common (1,500 shares)	16,500		
Net Sales Revenue	860,600		

Prepare a multi-step income statement for Shepard Motorsports for the fiscal year ended November 30, 2016. Include earnings per share.

> Continuing Problem

P15-41 Using ratios to evaluate a stock investment

This problem continues the Daniels Consulting situation from Problem P14-46 of Chapter 14. Assuming Daniels Consulting's net income for the year was $90,537 and knowing that the current market price of Daniels's stock is $200 per share, calculate the following ratios for 2017 for the company:

- **a.** Current ratio
- **b.** Cash ratio
- **c.** Debt ratio
- **d.** Debt to equity ratio
- **e.** Earnings per share
- **f.** Price/earnings ratio
- **g.** Rate of return on common stockholders' equity

DANIELS CONSULTING
Comparative Balance Sheet
December 31, 2017 and 2016

	2017	2016
Assets		
Current Assets:		
Cash	$ 1,457,524	$ 31,700
Accounts Receivable	25,700	700
Office Supplies	2,150	50
Long-term Assets:		
Plants Assets	84,800	4,800
Accumulated Depreciation—Plant Assets	(1,696)	(80)
Total Assets	**$ 1,568,478**	**$ 37,170**
Liabilities		
Current Liabilities:		
Accounts Payable	$ 7,300	$ 4,100
Salaries Payable	1,800	467
Unearned Revenue	0	1,600
Interest Payable	25,000	0
Long-term Liabilities:		
Notes Payable	500,000	0
Bonds Payable	900,000	0
Discount on Bonds Payable	(100,862)	0
Total Liabilities	1,333,238	6,167
Stockholders’ Equity		
Common Stock, $1 par	115,240	240
Retained Earnings	120,000	30,763
Total Stockholders’ Equity	235,240	31,003
Total Liabilities and Stockholders’ Equity	**$ 1,568,478**	**$ 37,170**

COMPREHENSIVE PROBLEM

> Comprehensive Problem for Chapter 15

Analyzing a company for its investment potential

In its annual report, WRM Athletic Supply, Inc. includes the following five-year financial summary:

WRM ATHLETIC SUPPLY, INC.
Five-Year Financial Summary (Partial; adapted)

(Dollar amounts in thousands except per share data)	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**
Net Sales	$ 290,000	$ 215,000	$ 194,000	$ 165,000	$ 139,000	
Net Sales Increase	35%	11%	18%	19%	17%	
Domestic Comparative Store Sales Increase	5%	7%	5%	8%	10%	
Other Income—Net	2,050	1,810	1,790	1,660	1,300	
Cost of Goods Sold	218,660	163,400	150,350	129,360	110,227	
Selling and Administrative Expenses	41,236	36,356	31,679	27,408	22,516	
Interest:						
Interest Expense	(1,010)	(1,360)	(1,370)	(1,060)	(870)	
Interest Income	120	160	165	225	155	
Income Tax Expense	4,430	3,830	3,690	3,380	2,760	
Net Income	26,834	12,024	8,866	5,677	4,082	
Per Share of Common Stock:						
Net Income	1.80	1.50	1.40	1.20	0.98	
Dividends	0.40	0.38	0.34	0.30	0.26	
Financial Position						
Current Assets, Excluding Merchandise Inventory	$ 30,400	$ 27,500	$ 26,200	$ 24,900	$ 21,700	
Merchandise Inventory at LIFO Cost	24,200	22,500	21,400	19,900	17,100	$ 16,400
Property, Plant, and Equipment, Net	51,100	45,600	40,700	35,200	25,900	
Total Assets	105,700	95,600	88,300	80,000	64,700	
Current Liabilities	32,200	27,100	28,700	25,800	16,700	
Long-term Debt	22,600	21,700	17,100	18,300	12,600	
Stockholders' Equity	50,900	46,800	42,500	35,900	35,400	
Financial Ratios						
Acid-Test Ratio	0.9	1.0	0.9	1.0	1.3	
Rate of Return on Total Assets	27.7%	14.6%	12.2%	9.3%	8.3%	
Rate of Return on Common Stockholders' Equity	54.9%	26.9%	22.6%	15.9%	15.4%	

Requirements

1. Analyze the company's financial summary for the fiscal years 2016–2020 to decide whether to invest in the common stock of WRM. Include the following sections in your analysis, and fully explain your final decision.
   a. Trend analysis for net sales and net income (use 2016 as the base year).
   b. Profitability analysis.
   c. Evaluation of the ability to sell merchandise inventory (WRM uses the LIFO method).
   d. Evaluation of the ability to pay debts.
   e. Evaluation of dividends.

CRITICAL THINKING

> Decision Case 15-1

Lance Berkman is the controller of Saturn, a dance club whose year-end is December 31. Berkman prepares checks for suppliers in December, makes the proper journal entries, and posts them to the appropriate accounts in that month. However, he holds on to the checks and mails them to the suppliers in January.

Requirements

1. What financial ratio(s) is(are) most affected by the action?
2. What is Berkman's purpose in undertaking this activity?

> Ethical Issue 15-1

Ross's Lipstick Company's long-term debt agreements make certain demands on the business. For example, Ross may not purchase treasury stock in excess of the balance of retained earnings. Also, long-term debt may not exceed stockholders' equity, and the current ratio may not fall below 1.50. If Ross fails to meet any of these requirements, the company's lenders have the authority to take over management of the company.

Changes in consumer demand have made it hard for Ross to attract customers. Current liabilities have mounted faster than current assets, causing the current ratio to fall to 1.47. Before releasing financial statements, Ross's management is scrambling to improve the current ratio. The controller points out that an investment can be classified as either long-term or short-term, depending on management's intention. By deciding to convert an investment to cash within one year, Ross can classify the investment as short-term—a current asset. On the controller's recommendation, Ross's board of directors votes to reclassify long-term investments as short-term.

Requirements

1. What effect will reclassifying the investments have on the current ratio? Is Ross's true financial position stronger as a result of reclassifying the investments?
2. Shortly after the financial statements are released, sales improve; so, too, does the current ratio. As a result, Ross's management decides not to sell the investments it had reclassified as short-term. Accordingly, the company reclassifies the investments as long-term. Has management behaved unethically? Give the reasoning underlying your answer.

> Financial Statement Case 15-1

Use **Starbucks Corporation**'s Fiscal 2013 Annual Report to answer the following questions. Visit **http://www.pearsonglobaleditions.com/Horngren** to view a link to the Starbucks Corporation Annual Report.

Requirements

1. Compute trend analyses for total net revenues and net earnings. Use October 2, 2011, as the base year. What is the most notable aspect of these data?
2. Perform a vertical analysis for Starbucks Corporation's asset section of the balance sheet as of September 29, 2013, and September 30, 2012.

> Team Projects

Team Project 15-1

Select an industry you are interested in, and pick any company in that industry to use as the benchmark. Then select two other companies in the same industry. For each category of ratios, compute all the ratios for the three companies. Write a two-page report that compares the two companies with the benchmark company.

Team Project 15-2

Select a company and obtain its financial statements. Convert the income statement and the balance sheet to common size, and compare the company you selected to the industry average. The Risk Management Association's *Annual Statement Studies* and Dun & Bradstreet's *Industry Norms & Key Business Ratios* publish common-size statements for most industries.

> Quick Check Answers

1. b **2.** b **3.** a **4.** c **5.** a **6.** b **7.** d **8.** c **9.** a **10A.** d

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K/A

Amendment No. 1

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the fiscal year ended September 28, 2013

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the transition period from to

Commission file number 1-12340

GREEN MOUNTAIN COFFEE ROASTERS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**03-0339228**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

33 Coffee Lane, Waterbury, Vermont 05676
(Address of principal executive offices) (zip code)

(802) 244-5621
(Registrants' telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report.)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $0.10 par value per share	The Nasdaq Global Select Market

Reprinted by permission of Green Mountain Coffee Roasters

Securities registered pursuant to Section 12(g) of the Act: NONE

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒	Accelerated filer ☐
Non-accelerated filer ☐ (Do not check if a smaller reporting company)	Smaller Reporting Company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting stock of the registrant held by non-affiliates of the registrant on March 30, 2013 was approximately $7,923,000,000 based upon the closing price of such stock on March 29, 2013.

As of November 13, 2013, 149,030,940 shares of common stock of the registrant were outstanding.

EXPLANATORY NOTE

This Amendment No. 1 ("Amendment No. 1") to the Annual Report on Form 10-K of Green Mountain Coffee Roasters, Inc. (together with its subsidiaries, the "Company," "we," "our," or "us") for the fiscal year ended September 28, 2013 as filed with the SEC on November 20, 2013 (the "2013 Annual Report"), is being filed solely to insert conformed signatures to each of Exhibits 23, 31-1, 31-2, 32-1 and 32-2, which conformed signatures were inadvertently omitted from the initial filing.

This Amendment No. 1 does not amend, modify or update any other portion of the 2013 Annual Report. Additionally, except as specifically referenced herein, this Amendment No. 1 does not reflect any event occurring after the time the 2013 Annual Report was filed on November 20, 2013.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the 2014 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Form 10-K, are incorporated by reference in Part III, Items 10-14 of this Form 10-K.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and the Stockholders
of Green Mountain Coffee Roasters, Inc.

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of Green Mountain Coffee Roasters, Inc. and its subsidiaries at September 28, 2013 and September 29, 2012, and the results of their operations and their cash flows for each of the three years in the period ended September 28, 2013 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 28, 2013, based on criteria established in *Internal Control—Integrated Framework* (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
November 20, 2013

GREEN MOUNTAIN COFFEE ROASTERS, INC.

CONSOLIDATED BALANCE SHEETS
(Dollars in thousands)

	September 28, 2013	September 29, 2012
Assets		
Current assets:		
Cash and cash equivalents	$ 260,092	$ 58,289
Restricted cash and cash equivalents	560	12,884
Receivables, less uncollectible accounts and return allowances of $33,640 and $34,517 at September 28, 2013 and September 29, 2012, respectively	467,976	363,771
Inventories	676,089	768,437
Income taxes receivable	11,747	32,943
Other current assets	46,891	35,019
Deferred income taxes, net	58,137	51,613
Total current assets	1,521,492	1,322,956
Fixed assets, net	985,563	944,296
Intangibles, net	435,216	498,352
Goodwill	788,184	808,076
Deferred income taxes, net	149	—
Other long-term assets	30,944	42,109
Total assets	$ 3,761,548	$ 3,615,789
Liabilities and Stockholders' Equity		
Current liabilities:		
Current portion of long-term debt	$ 12,929	$ 6,691
Current portion of capital lease and financing obligations	1,760	3,057
Accounts payable	312,170	279,577
Accrued expenses	242,427	171,450
Income tax payable	—	29,322
Deferred income taxes, net	233	245
Other current liabilities	27,544	29,645
Total current liabilities	597,063	519,987
Long-term debt, less current portion	160,221	466,984
Capital lease and financing obligations, less current portion	76,061	54,794
Deferred income taxes, net	252,867	270,348
Other long-term liabilities	28,721	32,544
Commitments and contingencies (See Notes 5 and 19)		
Redeemable noncontrolling interests	11,045	9,904
Stockholders' equity:		
Preferred stock, $0.10 par value: Authorized—1,000,000 shares; No shares issued or outstanding	—	—
Common stock, $0.10 par value: Authorized—500,000,000 shares; Issued and outstanding—150,265,809 and 152,680,855 shares at September 28, 2013 and September 29, 2012, respectively	15,026	15,268
Additional paid-in capital	1,387,322	1,464,560
Retained earnings	1,252,407	771,200
Accumulated other comprehensive (loss) income	(19,185)	10,200
Total stockholders' equity	$ 2,635,570	$ 2,261,228
Total liabilities and stockholders' equity	$ 3,761,548	$ 3,615,789

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(Dollars in thousands except per share data)

	Fiscal years ended		
	September 28, 2013	September 29, 2012	September 24, 2011
Net sales	$ 4,358,100	$ 3,859,198	$ 2,650,899
Cost of sales	2,738,714	2,589,799	1,746,274
Gross profit	1,619,386	1,269,399	904,625
Selling and operating expenses	560,430	481,493	348,696
General and administrative expenses	293,729	219,010	187,016
Operating income	765,227	568,896	368,913
Other income, net	960	1,819	648
Gain (loss) on financial instruments, net	5,513	(4,945)	(6,245)
(Loss) gain on foreign currency, net	(12,649)	7,043	(2,912)
Gain on sale of subsidiary	—	26,311	—
Interest expense	(18,177)	(22,983)	(57,657)
Income before income taxes	740,874	576,141	302,747
Income tax expense	(256,771)	(212,641)	(101,699)
Net Income	$ 484,103	$ 363,500	$ 201,048
Net income attributable to noncontrolling interests	871	872	1,547
Net income attributable to GMCR	$ 483,232	$ 362,628	$ 199,501
Basic income per share:			
Basic weighted average shares outstanding	149,638,636	154,933,948	146,214,860
Net income per common share—basic	$ 3.23	$ 2.34	$ 1.36
Diluted income per share:			
Diluted weighted average shares outstanding	152,801,493	159,075,646	152,142,434
Net income per common share—diluted	$ 3.16	$ 2.28	$ 1.31

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in thousands)

	Fiscal years ended								
	September 28, 2013			September 29, 2012			September 24, 2011		
	Pre-tax	**Tax (expense) benefit**	**After-tax**	**Pre-tax**	**Tax (expense) benefit**	**After-tax**	**Pre-tax**	**Tax (expense) benefit**	**After-tax**
Net income			$ 484,103			$ 363,500			$ 201,048
Other comprehensive income (loss):									
Cash flow hedges:									
Unrealized losses arising during the period	$ (3,732)	$ 1,489	$ (2,243)	$ (1,234)	$ 498	$ (736)	$ (7,521)	$ 3,035	$ (4,486)
Losses reclassified to net income	1,484	(599)	885	1,359	(549)	810	419	(169)	250
Foreign currency translation adjustments	(28,742)	—	(28,742)	25,353	—	25,353	(8,895)	—	(8,895)
Other comprehensive (loss) income	$ (30,990)	$ 890	$ (30,100)	$ 25,478	$ (51)	$ 25,427	$ (15,997)	$ 2,866	$ (13,131)
Total comprehensive income			454,003			388,927			187,917
Total comprehensive income attributable to noncontrolling interests			156			1,524			1,361
Total comprehensive income attributable to GMCR			$ 453,847			$ 387,403			$ 186,556

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
For the three fiscal years in the period ended September 28, 2013 (Dollars in thousands)

	Common stock		Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Stockholders' Equity
	Shares	Amount				
Balance at September 25, 2010	132,823,585	$ 13,282	$ 473,749	$ 213,844	$ (1,630)	$ 699,245
Sale of common stock for private placement	9,174,991	918	290,178	—	—	291,096
Options exercised	2,839,426	284	11,096	—	—	11,380
Issuance of common stock under employee stock purchase plan	148,917	15	5,933	—	—	5,948
Issuance of common stock for public equity offering	9,479,544	948	646,415	—	—	647,363
Stock compensation expense	—	—	10,361	—	—	10,361
Tax benefit from exercise of options	—	—	61,670	—	—	61,670
Deferred compensation expense	—	—	214	—	—	214
Adjustment of redeemable noncontrolling interests to redemption value	—	—	—	(1,618)	—	(1,618)
Other comprehensive loss net of tax	—	—	—	—	(12,945)	(12,945)
Net income	—	—	—	199,501	—	199,501
Balance at September 24, 2011	154,466,463	$ 15,447	$ 1,499,616	$ 411,727	$ (14,575)	$ 1,912,215
Options exercised	940,369	94	3,300	—	—	3,394
Issuance of common stock under employee stock purchase plan	301,971	30	8,668	—	—	8,698
Restricted stock awards and units	55,747	5	(5)	—	—	—
Issuance of common stock under deferred compensation plan	37,005	4	(4)	—	—	—
Repurchase of common stock	(3,120,700)	(312)	(76,158)	—	—	(76,470)
Stock compensation expense	—	—	17,868	—	—	17,868
Tax benefit from equity-based compensation plans	—	—	11,064	—	—	11,064
Deferred compensation expense	—	—	211	—	—	211
Adjustment of redeemable noncontrolling interests to redemption value	—	—	—	(3,155)	—	(3,155)
Other comprehensive income, net of tax	—	—	—	—	24,775	24,775
Net income	—	—	—	362,628	—	362,628
Balance at September 29, 2012	152,680,855	$ 15,268	$ 1,464,560	$ 771,200	$ 10,200	$ 2,261,228
Options exercised	2,849,308	285	19,532	—	—	19,817
Issuance of common stock under employee stock purchase plan	343,678	34	9,926	—	—	9,960
Restricted stock awards and units	34,761	3	(3)	—	—	—
Repurchase of common stock	(5,642,793)	(564)	(187,714)	—	—	(188,278)
Stock compensation expense	—	—	26,081	—	—	26,081
Tax benefit from equity-based compensation plans	—	—	54,706	—	—	54,706
Deferred compensation expense	—	—	234	—	—	234
Adjustment of redeemable noncontrolling interests to redemption value	—	—	—	(2,025)	—	(2,025)
Other comprehensive loss, net of tax	—	—	—	—	(29,385)	(29,385)
Net income	—	—	—	483,232	—	483,232
Balance at September 28, 2013	150,265,809	$ 15,026	$ 1,387,322	$ 1,252,407	$ (19,185)	$ 2,635,570

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)

	Fiscal years ended		
	September 28, 2013	**September 29, 2012**	**September 24, 2011**
Cash flows from operating activities:			
Net income	$ 484,103	$ 363,500	$ 201,048
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization of fixed assets	183,814	135,656	72,297
Amortization of intangibles	45,379	45,991	41,339
Amortization deferred financing fees	7,125	6,050	6,158
Loss on extinguishment of debt	—	—	19,732
Unrealized loss (gain) on foreign currency, net	9,159	(6,557)	1,041
(Gain) loss on disposal of fixed assets	(85)	2,517	884
Gain on sale of subsidiary, excluding transaction costs	—	(28,914)	—
Provision for doubtful accounts	689	3,197	2,584
Provision for sales returns	79,747	107,436	64,457
(Gain) loss on derivatives, net	(4,507)	6,310	3,292
Excess tax benefits from equity-based compensation plans	(54,699)	(12,070)	(67,813)
Deferred income taxes	(17,701)	60,856	(8,828)
Deferred compensation and stock compensation	26,315	18,079	10,575
Other	844	(672)	(6,142)
Changes in assets and liabilities, net of effects of acquisition:			
Receivables	(187,221)	(159,317)	(157,329)
Inventories	87,677	(92,862)	(375,709)
Income tax payable/receivable, net	46,290	16,457	63,487
Other current assets	(12,668)	(6,900)	(715)
Other long-term assets, net	3,915	(469)	(11,454)
Accounts payable and accrued expenses	133,532	17,125	134,035
Other current liabilities	3,100	(2,718)	(3,118)
Other long-term liabilities	1,161	5,090	10,964
Net cash provided by operating activities	835,969	477,785	785
Cash flows from investing activities:			
Change in restricted cash	3,005	(2,875)	2,074
Acquisition of LJVH Holdings, Inc. (Van Houtte), net of cash acquired	—	—	(907,835)
Proceeds from the sale of subsidiary, net of cash acquired	—	137,733	—
Capital expenditures for fixed assets	(232,780)	(401,121)	(283,444)
Other investing activities	4,208	618	1,533
Net cash used in investing activities	(225,567)	(265,645)	(1,187,672)

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
(Dollars in thousands)

	Fiscal years ended		
	September 28, 2013	September 29, 2012	September 24, 2011
Cash flows from financing activities:			
Net change in revolving line of credit	(226,210)	(108,727)	333,835
Proceeds from issuance of common stock under compensation plans	29,777	12,092	17,328
Proceeds from issuance of common stock for private placement	—	—	291,096
Proceeds from issuance of common stock for public equity offering	—	—	673,048
Financing costs in connection with public equity offering	—	—	(25,685)
Repurchase of common stock	(188,278)	(76,470)	—
Excess tax benefits from equity-based compensation plans	54,699	12,070	67,813
Payments on capital lease and financing obligations	(8,288)	(7,558)	(8)
Proceeds from borrowings of long-term debt	—	—	796,375
Deferred financing fees	—	—	(46,009)
Repayment of long-term debt	(71,620)	(7,814)	(906,885)
Other financing activities	(1,406)	3,283	(1,063)
Net cash (used in) provided by financing activities	(411,326)	(173,124)	1,199,845
Change in cash balances included in current assets held for sale	—	5,160	(5,160)
Effect of exchange rate changes on cash and cash equivalents	2,727	1,124	790
Net increase in cash and cash equivalents	201,803	45,300	8,588
Cash and cash equivalents at beginning of period	58,289	12,989	4,401
Cash and cash equivalents at end of period	$ 260,092	$ 58,289	$ 12,989
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ 9,129	$ 20,783	$ 33,452
Cash paid for income taxes	$ 223,580	$ 136,407	$ 58,182
Fixed asset purchases included in accounts payable and not disbursed at the end of each year	$ 30,451	$ 56,127	$ 25,737
Noncash financing and investing activity:			
Fixed assets acquired under capital lease and financing obligations	$ 27,791	$ 66,531	$ —
Settlement of acquisition-related liabilities through release of restricted cash	$ 9,227	$ 18,788	$ —

The accompanying Notes to Consolidated Financial Statements are an integral part of these financial statements.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Business and Organization

Green Mountain Coffee Roasters, Inc. (together with its subsidiaries, "the Company") is a leader in the specialty coffee and coffeemaker businesses. Green Mountain Coffee Roasters, Inc. is a Delaware corporation.

The Company manages its operations through two business segments, its United States operations within the Domestic segment and its Canadian operations within the Canada segment. The Company distributes its products in two channels: at-home ("AH") and away-from-home ("AFH").

The Domestic segment sells single cup brewers, accessories, and sources, produces and sells coffee, hot cocoa, teas and other beverages in K-Cup® and Vue® packs ("portion packs") and coffee in more traditional packaging including bags and fractional packs to retailers including supermarkets, department stores, mass merchandisers, club stores, and convenience stores; to restaurants, hospitality accounts, office coffee distributors, and partner brand owners; and to consumers through Company websites. Substantially all of the Domestic segment's distribution to major retailers is processed by fulfillment entities which receive and fulfill sales orders and invoice certain retailers primarily in the AH channel. The Domestic segment also earns royalty income from K-Cup® packs sold by a third-party licensed roaster.

The Canada segment sells single cup brewers, accessories, and sources, produces and sells coffee and teas and other beverages in portion packs and coffee in more traditional packaging including bags, cans and fractional packs under a variety of brands to retailers including supermarkets, department stores, mass merchandisers, club stores, through office coffee services to offices, convenience stores, restaurants, hospitality accounts, and to consumers through its website. The Canada segment included Filterfresh through October 3, 2011, the date of sale (see Note 3, *Acquisitions and Divestitures*).

The Company's fiscal year ends on the last Saturday in September. Fiscal years 2013, 2012 and 2011 represent the years ended September 28, 2013, September 29, 2012 and September 24, 2011, respectively. Fiscal years 2013 and 2011 each consist of 52 weeks and fiscal 2012 consisted of 53 weeks.

2. Significant Accounting Policies

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Company to make estimates and assumptions that affect amounts reported in the accompanying Consolidated Financial Statements. Significant estimates and assumptions by management affect the Company's inventory, deferred tax assets, allowance for sales returns, warranty reserves and certain accrued expenses, goodwill, intangible and long-lived assets and stock-based compensation.

Although the Company regularly assesses these estimates, actual results could differ from these estimates. Changes in estimates are recorded in the period they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances.

Principles of Consolidation

The Consolidated Financial Statements include the accounts of the Company and all of the entities in which the Company has a controlling financial interest, most often because the Company holds a majority voting/ownership interest. All significant intercompany transactions and accounts are eliminated in consolidation.

Noncontrolling Interests

Noncontrolling interests ("NCI") are evaluated by the Company and are shown as either a liability, temporary equity (shown between liabilities and equity) or as permanent equity depending on the nature of the redeemable features at amounts based on formulas specific to each entity. Generally, mandatorily redeemable NCI's are classified as liabilities and non-mandatorily redeemable NCI's are classified as either temporary or permanent equity. Redeemable NCIs that are not mandatorily redeemable are classified outside of shareholders' equity in the Consolidated Balance Sheets as temporary equity under the caption, *Redeemable noncontrolling interests,* and are measured at their redemption values at the end of each period. If the redemption value is greater than the carrying value, an adjustment is recorded in retained earnings to record the NCI at its redemption value. Redeemable NCIs that are mandatorily redeemable are classified as a liability in the Consolidated Balance Sheets under either *Other current liabilities* or *Other long-term liabilities*, depending on the remaining duration until settlement, and are measured at the amount of cash that would be paid if settlement occurred at the balance sheet date based on the formula in the Share Purchase and Sale Agreement dated June 22, 2012, with any change from the prior period recognized as interest expense. See Note 8, *Noncontrolling Interests* in the Consolidated Financial Statements included in this Annual Report for further information.

Net income attributable to NCIs reflects the portion of the net income (loss) of consolidated entities applicable to the NCI shareholders in the accompanying Consolidated Statements of Operations. The net income attributable to NCIs is classified in the Consolidated Statements of Operations as part of consolidated net income and deducted from total consolidated net income to arrive at the net income attributable to the Company.

If a change in ownership of a consolidated subsidiary results in a loss of control or deconsolidation, any retained ownership interests are remeasured with the gain or loss reported to net earnings.

Business Combinations

The Company uses the acquisition method of accounting for business combinations and recognizes assets acquired and liabilities assumed measured at their fair values on the date acquired. Goodwill represents the excess of the purchase price over the fair value of the net assets. The fair values of the assets and liabilities acquired are determined based upon the Company's valuation. The valuation involves making significant estimates and assumptions which are based on detailed financial models including the projection of future cash flows, the weighted average cost of capital and any cost savings that are expected to be derived in the future.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. Cash and cash equivalents include money market funds which are carried at cost, plus accrued interest, which approximates fair value. The Company does not believe that it is subject to any unusual credit or market risk.

Restricted Cash and Cash Equivalents

Restricted cash and cash equivalents represents cash that is not available for use in our operations. Restricted cash of $0.6 million and $12.9 million as of September 28, 2013 and September 29, 2012, respectively. The restricted cash balance as of September 29, 2012 consisted primarily of cash placed in escrow related to our acquisition of Van Houtte, and was released during fiscal 2013.

Allowance for Doubtful Accounts

A provision for doubtful accounts is provided based on a combination of historical experience, specific identification and customer credit risk where there are indications that a specific customer may be experiencing financial difficulties.

Inventories

Inventories consist primarily of green and roasted coffee, including coffee in portion packs, purchased finished goods such as coffee brewers, and packaging materials. Inventories are stated at the lower of cost or market. Cost is being measured using an adjusted standard cost method which approximates FIFO (first-in, first-out). The Company regularly reviews whether the net realizable value of its inventory is lower than its carrying value. If the valuation shows that the net realizable value is lower than the carrying value, the Company takes a charge to cost of sales and directly reduces the carrying value of the inventory.

The Company estimates any required write downs for inventory obsolescence by examining its inventories on a quarterly basis to determine if there are indicators that the carrying values exceed net realizable value. Indicators that could result in additional inventory write downs include age of inventory, damaged inventory, slow moving products and products at the end of their life cycles. While management believes that inventory is appropriately stated at the lower of cost or market, significant judgment is involved in determining the net realizable value of inventory.

Financial Instruments

The Company enters into various types of financial instruments in the normal course of business. Fair values are estimated based on assumptions concerning the amount and timing of estimated future cash flows and assumed discount rates reflecting varying degrees of perceived risk. Cash, cash equivalents, accounts receivable, accounts payable and accrued expenses are reported at carrying value and approximate fair value due to the short maturity of these instruments. Long-term debt is also reported at carrying value, which approximates fair value due to the fact that the interest rate on the debt is based on variable interest rates.

The fair values of derivative financial instruments have been determined using market information and valuation methodologies. Changes in assumptions or estimates could affect the determination of fair value; however, management does not believe any such changes would have a material impact on the Company's financial condition, results of operations or cash flows. The fair values of short-term investments and derivative financial instruments are disclosed in Note 12, *Fair Value Measurements*, in the Consolidated Financial Statements included in this Annual Report.

Derivative Instruments

The Company enters into over-the-counter derivative contracts based on coffee futures ("coffee futures") to hedge against price increases in price-to-be-fixed coffee purchase commitments and anticipated coffee purchases. Coffee purchases are generally denominated in the U.S. dollar. The Company also enters into interest rate swap agreements to mitigate interest rate risk associated with the Company's variable-rate borrowings and foreign currency forward contracts to hedge the purchase and payment of certain green coffee purchase commitments as well as certain recognized liabilities in currencies other than the Company's functional currency. All derivatives are recorded at fair value. Interest rate swaps, coffee futures, and certain foreign currency forward contracts which hedge the purchase and payment of green coffee purchase commitments are designated as cash flow hedges with the effective portion of the change in the fair value of the derivative instrument recorded as a component of other comprehensive income ("OCI") and subsequently reclassified into net earnings when the hedged exposure affects net earnings. Foreign currency forward contracts which hedge certain recognized liabilities denominated in non-functional currencies are designated as fair value hedges with the changes in the fair value of these instruments along with the changes in the fair value of the hedged liabilities recognized in *gain or loss on foreign currency, net* in the Consolidated Statements of Operations.

Effectiveness is determined by how closely the changes in the fair value of the derivative instrument offset the changes in the fair value of the hedged item. The ineffective portion of the change in the fair value of the derivative instrument is recorded directly to earnings.

The Company formally documents hedging instruments and hedged items, and measures at each balance sheet date the effectiveness of its hedges. When it is determined that a derivative is not highly effective, the derivative expires, or is sold or terminated, or the derivative is discontinued because it is unlikely that a forecasted transaction will occur, the Company discontinues hedge accounting prospectively for that specific hedge instrument.

The Company also enters into certain foreign currency and interest rate derivative contracts to hedge certain foreign currency exposures that are not designated as hedging instruments for accounting purposes. These contracts are recorded at fair value, with the changes in fair value recognized in *gain (loss) on financial instruments, net* in the Consolidated Statements of Operations.

The Company does not engage in speculative transactions, nor does it hold derivative instruments for trading purposes. See Note 11, *Derivative Financial Instruments* and Note 14, *Stockholders' Equity* in the Consolidated Financial Statements included in this Annual Report for further information.

Deferred Financing Costs

Deferred financing costs consist primarily of commitment fees and loan origination fees and are being amortized over the respective life of the applicable debt using a method that approximates the effective interest rate method. Deferred financing costs included in *Other long-term assets* in the accompanying Consolidated Balance Sheets as of September 28, 2013 and September 29, 2012 were $15.2 million and $22.3 million, respectively.

Goodwill and Intangibles

Goodwill is tested for impairment annually at the end of the Company's fiscal year or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Goodwill is assigned to reporting units for purposes of impairment testing. A reporting unit is the same as an operating segment or one level below an operating segment. The Company may assess qualitative factors to determine if it is more likely than not (i.e., a likelihood of more than 50%) that the fair value of a reporting unit is less than its carrying amount, including goodwill. If the Company determines that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, no further testing is necessary. If, however, the Company determines that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company performs the first step of a two-step goodwill impairment test. The assessment of qualitative factors is optional and at the Company's discretion. The Company may bypass the qualitative assessment for any reporting unit in any period and perform the first step of the quantitative goodwill impairment test. The Company may resume performing the qualitative assessment in any subsequent period. The first step is a comparison of each reporting unit's fair value to its carrying value. The Company estimates fair value based on discounted cash flows. The reporting unit's discounted cash flows require significant management judgment with respect to sales forecasts, gross margin percentages, selling, operating, general and administrative ("SG&A") expenses, capital expenditures and the selection and use of an appropriate discount rate. The projected sales, gross margin and SG&A expense rate assumptions and capital expenditures are based on the Company's annual business plan or other forecasted results. Discount rates reflect market-based estimates of the risks associated with the projected cash flows directly resulting from the use of those assets in operations. The estimates of fair value of reporting units are based on the best information available as of the date of the assessment. If the carrying value of a reporting unit exceeds its estimated fair value in the first step, a second step is performed, which requires the Company to allocate the fair value of the reporting unit derived in the first step to the fair value of the reporting unit's net assets, with any fair value in excess of amounts allocated to such net assets representing the implied fair value of goodwill for that reporting unit. If the implied fair value of the goodwill is less than the book value, goodwill is impaired and is written down to the implied fair value amount.

Intangible assets that have finite lives are amortized over their estimated economic useful lives on a straight line basis. Intangible assets that have indefinite lives are not amortized and are tested for impairment annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Similar to the qualitative assessment for goodwill, the Company may assess qualitative factors to determine if it is more likely than not (i.e., a likelihood of more than 50%) that the fair value of the indefinite-lived intangible asset is less than its carrying amount. If the Company determines that it is not more likely than not that the fair value of the indefinite-lived intangible asset is less than its carrying amount, no further testing is necessary. If, however, the Company determines that it is more likely than not that the fair value of the indefinite-lived intangible asset is less than its carrying amount, the Company compares the fair value of the indefinite-lived asset with its carrying amount. If the carrying value of an individual indefinite-lived intangible asset exceeds its fair value, the individual indefinite-lived intangible asset is written down by an amount equal to such excess. The assessment of qualitative factors is optional and at the Company's discretion. The Company may bypass the qualitative assessment for any indefinite-lived intangible asset in any period and resume performing the qualitative assessment in any subsequent period.

Impairment of Long-Lived Assets

When facts and circumstances indicate that the carrying values of long-lived assets, including fixed assets, may be impaired, an evaluation of recoverability is performed by comparing the carrying value of the assets, at an asset group level, to undiscounted projected future cash flows in addition to other quantitative and qualitative analyses. When assessing impairment, property, plant and equipment assets are grouped at the lowest level for which there are identifiable cash flows that are largely independent of other groups of assets. Upon indication that the carrying value of such assets may not be recoverable, the Company recognizes an impairment loss as a charge against current operations. Long-lived assets to be disposed of are reported at the lower of the carrying amount or fair value, less estimated costs to sell. The Company makes judgments related to the expected useful lives of long-lived assets and its ability to realize undiscounted cash flows in excess of the carrying amounts of such assets which are affected by factors such as the ongoing maintenance and improvements of the assets, changes in economic conditions and changes in operating performance.

Fixed Assets

Fixed assets are carried at cost, net of accumulated depreciation. Expenditures for maintenance, repairs and renewals of minor items are expensed as incurred. Expenditures for refurbishments and improvements that significantly improve the productive capacity or extend the useful life of an asset are capitalized. Depreciation is calculated using the straight-line method over the assets' estimated useful lives. The cost and accumulated depreciation for fixed assets sold, retired, or otherwise disposed of are relieved from the accounts, and the resultant gains and losses are reflected in income.

The Company follows an industry-wide practice of purchasing and loaning coffee brewing and related equipment to wholesale customers. These assets are also carried at cost, net of accumulated depreciation.

Depreciation costs of manufacturing and distribution assets are included in cost of sales on the Consolidated Statements of Operations. Depreciation costs of other assets, including equipment on loan to customers, are included in selling and operating expenses on the Consolidated Statements of Operations.

Leases

Occasionally, the Company is involved in the construction of leased properties. Due to the extent and nature of that involvement, the Company is deemed the owner during the construction period and is required to capitalize the construction costs on the Consolidated Balance Sheets along with a corresponding financing obligation for the project costs that are incurred by the lessor. Upon completion of the project, a sale-leaseback analysis is performed to determine if the Company can record a sale to remove the assets and related obligation and record the lease as either an operating or capital lease obligation. If the Company is precluded from derecognizing the assets when construction is complete due to continuing involvement beyond a normal leaseback, the lease is accounted for as a financing transaction and the recorded asset and related financing obligation remain on the Consolidated Balance Sheet. Accordingly, the asset is depreciated over its estimated useful life in accordance with the Company's policy. If the Company is not considered the owner of the land, a portion of the lease payments is allocated to ground rent and treated as an operating lease. The portion of the lease payment allocated to ground rental expense is based on the fair value of the land at the commencement of construction. Lease payments allocated to the buildings are recognized as reductions to the financing obligation and interest expense. See Note 19, *Commitments and Contingencies*, for further information.

Leases that qualify as capital leases are recorded at the lower of the fair value of the asset or the present value of the future minimum lease payments over the lease term generally using the Company's incremental borrowing rate. Assets leased under capital leases are included in fixed assets and generally are depreciated over the lease term. Lease payments under capital leases are recognized as a reduction of the capital lease obligation and interest expense.

All other leases are considered operating leases. Assets subject to an operating lease are not recorded on the balance sheet. Lease payments are recognized on a straight-line basis as rent expense over the expected lease term.

Revenue Recognition

Revenue from sales of single cup brewer systems, coffee and other specialty beverages in portion packs, and coffee in more traditional packaging including whole bean and ground coffee selections in bags and ground coffee in fractional packs is recognized when title and risk of loss passes to the customer, which generally occurs upon shipment or delivery of the product to the customer as defined by the contractual shipping terms. Shipping charges billed to customers are also recognized as revenue, and the related shipping costs are included in cost of sales. Cash received in advance of product delivery is recorded in deferred revenue, which is included in other current liabilities on the accompanying Consolidated Balance Sheets, until earned.

The majority of the Company's distribution to major retailers is processed by fulfillment entities. The fulfillment entities receive and fulfill sales orders and invoice certain retailers. All product shipped by the Company to the fulfillment entities are owned by the Company and included in inventories on the accompanying consolidated balance sheets. The Company recognizes revenue when delivery of the product from the fulfillment entity to the retailer has occurred based on the contractual shipping terms and when all other revenue recognition criteria are met.

Sales of single cup brewers, portion packs and other products are recognized net of any discounts, returns, allowances and sales incentives, including coupon redemptions and rebates. The Company estimates the allowance for returns using an average return rate based on historical experience and an evaluation of contractual rights or obligations. The Company routinely participates in trade promotion programs with customers, including customers whose sales are processed by the fulfillment entities, whereby customers can receive certain incentives and allowances which are recorded as a reduction to sales when the sales incentive is offered and committed to or, if the incentive relates to specific sales, at the later of when that revenue is recognized or the date at which the sales incentive is offered. These incentives include, but are not limited to, cash discounts and volume based incentive programs. Allowances to customers that are directly attributable and supportable by customer promotional activities are recorded as selling expenses at the time the promotional activity occurs.

Roasters licensed by the Company to manufacture and sell K-Cup® packs, both to the Company for resale and to their other coffee customers, are obligated to pay a royalty to the Company upon shipment to their customer. The Company records royalty revenue upon shipment of K-Cup® packs by licensed roasters to third-party customers as set forth under the terms and conditions of various licensing agreements. For shipments of K-Cup® packs to the Company for resale, this royalty payment is recorded as a reduction to the carrying value of the related K-Cup® packs in inventory and as a reduction to cost of sales when sold through to third-party customers by the Company.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Cost of Sales

Cost of sales for the Company consists of the cost of raw materials including coffee beans, hot cocoa, flavorings and packaging materials; a portion of our rental expense; production, warehousing and distribution costs which include salaries; distribution and merchandising personnel; leases and depreciation on facilities and equipment used in production; the cost of brewers manufactured by suppliers; third-party fulfillment charges; receiving, inspection and internal transfer costs; warranty expense; freight, duties and delivery expenses; and certain third-party royalty charges. All shipping and handling expenses are also included as a component of cost of sales.

Product Warranty

The Company provides for the estimated cost of product warranties in cost of sales, at the time product revenue is recognized. Warranty costs are estimated primarily using historical warranty information in conjunction with current engineering assessments applied to the Company's expected repair or replacement costs. The estimate for warranties requires assumptions relating to expected warranty claims which can be impacted significantly by quality issues.

Advertising Costs

The Company expenses the costs of advertising the first time the advertising takes place, except for direct mail campaigns targeted directly at consumers, which are expensed over the period during which they are expected to generate sales. As of September 28, 2013 and September 29, 2012, prepaid advertising costs of $4.1 million and $2.4 million, respectively, were recorded in *Other current assets* in the accompanying Consolidated Balance Sheets. Advertising expense totaled $193.2 million, $147.7 million, and $90.8 million, for fiscal years 2013, 2012, and 2011, respectively.

Income Taxes

The Company recognizes deferred tax assets and liabilities for the expected future tax benefits or consequences of temporary differences between the financial statement carrying amounts of existing assets and liabilities, and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. Judgment is required in determining the provision for income taxes and related accruals, deferred tax assets and liabilities. These include establishing a valuation allowance related to the ability to realize certain deferred tax assets. The Company currently believes that future earnings and current tax planning strategies will be sufficient to recover substantially all of the Company's recorded net deferred tax assets. To the extent future taxable income against which these assets may be applied is not sufficient, some portion or all of our recorded deferred tax assets would not be realizable.

Accounting for uncertain tax positions also requires significant judgments, including estimating the amount, timing and likelihood of ultimate settlement. Although the Company believes that its estimates are reasonable, actual results could differ from these estimates. The Company uses a more-likely-than-not measurement attribute for all tax positions taken or expected to be taken on a tax return in order for those tax positions to be recognized in the financial statements.

Stock-Based Compensation

The Company measures the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award. Equity awards consist of stock options, restricted stock units ("RSUs"), restricted stock awards ("RSAs"), and performance stock units ("PSUs"). The cost is recognized over the period during which an employee is required to provide service in exchange for the award.

The Company measures the fair value of stock options using the Black-Scholes model and certain assumptions, including the expected life of the stock options, an expected forfeiture rate and the expected volatility of its common stock. The expected life of options is estimated based on options vesting periods, contractual lives and an analysis of the Company's historical experience. The expected forfeiture rate is based on the Company's historical employee turnover experience and future expectations. The risk-free interest rate is based on the U.S. Treasury rate over the expected life. The Company uses a blended historical volatility to estimate expected volatility at the measurement date. The fair value of RSUs, RSAs and PSUs is based on the closing price of the Company's common stock on the grant date.

Foreign Currency Translation and Transactions

The financial statements of the Company's foreign subsidiaries are translated into the reporting currency of the Company which is the U.S. dollar. The functional currency of certain of the Company's foreign subsidiaries is the local currency of the subsidiary. Accordingly, the assets and liabilities of the Company's foreign subsidiaries are translated into U.S. dollars using the exchange rate in effect at each balance sheet date. Revenue and expense accounts are generally translated using the average rate of exchange during the period. Foreign currency translation adjustments are accumulated as a component of other comprehensive income or loss as a separate component of stockholders' equity. Gains and losses arising from transactions denominated in currencies other than the functional currency of the entity are charged directly against earnings in the Consolidated Statement of Operations. Gains and losses arising from transactions denominated in foreign currencies are primarily related to inter- company loans that have been determined to be temporary in nature, cash, long-term debt and accounts payable denominated in non-functional currencies.

Significant Customer Credit Risk and Supply Risk

The majority of the Company's customers are located in the U.S. and Canada. With the exception of M.Block & Sons ("MBlock") as described below, concentration of credit risk with respect to accounts receivable is limited due to the large number of customers in various channels comprising the Company's customer base. The Company does not require collateral from customers as ongoing credit evaluations of customers' payment histories are performed. The Company maintains reserves for potential credit losses and such losses, in the aggregate, have not exceeded management's expectations.

The Company procures the majority of the brewers it sells from one third-party brewer manufacturer. Purchases from this brewer manufacturer amounted to approximately $637.0 million, $721.3 million and $545.3 million in fiscal years 2013, 2012 and 2011, respectively.

The Company primarily relies on MBlock to process the majority of sales orders for our AH single serve business with retailers in the United States. The Company is subject to significant credit risk regarding the creditworthiness of MBlock and, in turn, the creditworthiness of the retailers. Sales processed by MBlock to retailers amounted to $1,600.2 million, $1,458.4 million and $997.0 million for fiscal years 2013, 2012 and 2011, respectively. The Company's account receivables due from MBlock amounted to $157.4 million and $133.1 million at September 28, 2013 and September 29, 2012, respectively.

Sales to customers that represented more than 10% of the Company's net sales included Wal-Mart Stores, Inc. and affiliates ("Wal-Mart"), representing approximately 14% and 12% of consolidated net sales for fiscal years 2013 and 2012, respectively; Costco Wholesale Corporation and affiliates ("Costco"), representing approximately 11% of consolidated net sales for fiscal 2013; and Bed Bath & Beyond, Inc., and affiliates ("Bed Bath & Beyond"), representing approximately 11% of consolidated net sales for fiscal 2011. For Wal-Mart and Bed Bath & Beyond, the majority of U.S. sales are processed through MBlock whereby MBlock is the vendor of record. Starting in fiscal 2012, for U.S. sales to Costco, the Company became the vendor of record and although the sales are processed through MBlock, the Company records the account receivables from the customer and pays MBlock for their fulfillment services. The Company's account receivables due from Costco amounted to $65.7 million, net of allowances, at September 28, 2013.

Research & Development

Research and development charges are expensed as incurred. These expenses amounted to $57.7 million, $41.7 million and $17.7 million in fiscal years 2013, 2012 and 2011, respectively. These costs primarily consist of salary and consulting expenses and are recorded in selling and operating expenses in each respective segment of the Company.

Recent Accounting Pronouncements

In July 2013, the Financial Accounting Standards Board (the "FASB") issued an Accounting Standards Update ("ASU") No. 2013-11, "Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists" ("ASU 2013-11"). ASU 2013-11 was issued to eliminate diversity in practice regarding the presentation of unrecognized tax benefits when a net operating loss carryforward, a similar tax loss, or a tax credit carryforward exists. Under ASU 2013-11, an unrecognized tax benefit, or a portion of an unrecognized tax benefit, should be presented in the financial statements as a reduction to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward. Otherwise, to the extent a net operating loss carryforward, a similar tax loss, or a tax credit carryforward is not available at the reporting date under the tax law of the applicable jurisdiction to settle any additional income taxes that would result from the disallowance of a tax position or the tax law of the applicable jurisdiction does not require the entity to use, and the entity does not intend to use, the deferred tax asset for such purpose, the unrecognized tax benefit should be presented in the financial statements as a liability and should not be combined with deferred tax assets. The amendments in this ASU are effective prospectively for reporting periods beginning after December 15, 2013, and early adoption is permitted. The adoption of ASU 2013-11 is not expected to have a material impact on the Company's net income, financial position or cash flows.

In March 2013, the FASB issued ASU No. 2013-05, "Foreign Currency Matters (Topic 830): Parent's Accounting for the Cumulative Translation Adjustment upon Derecognition of Certain Subsidiaries or Groups of Assets within a Foreign Entity or of an Investment in a Foreign Entity" ("ASU 2013-05"). ASU 2013-05 provides clarification regarding whether Subtopic 810-10, Consolidation—Overall, or Subtopic 830-30, Foreign Currency Matters—Translation of Financial Statements, applies to the release of cumulative translation adjustments into net income when a reporting entity either sells a part or all of its investment in a foreign entity or ceases to have a controlling financial interest in a subsidiary or group of assets that constitute a business within a foreign entity. The amendments in this ASU are effective prospectively for reporting periods beginning after December 15, 2013, and early adoption is permitted. The adoption of ASU 2013-05 is not expected to have a material impact on the Company's net income, financial position or cash flows.

In February 2013, the FASB issued ASU No. 2013-04, "Liabilities (Topic 405): Obligations Resulting from Joint and Several Liability Arrangements for Which the Total Amount of the Obligation Is Fixed at the Reporting Date" ("ASU 2013-04"). ASU 2013-04 provides guidance for the recognition, measurement and disclosure of obligations resulting from joint and several liability arrangements for which the total amount of the obligation within the scope of this ASU is fixed at the reporting date. The guidance requires an entity to measure those obligations as the sum of the amount the reporting entity agreed to pay on the basis of its arrangement among its co-obligors as well as any additional amount the reporting entity expects to pay on behalf of its co-obligors. ASU 2013-04 also requires an entity to disclose the nature and amount of those obligations. The amendments in this ASU are effective for reporting periods beginning after December 15, 2013, with early adoption permitted. Retrospective application is required. The adoption of ASU 2013-04 is not expected to have a material impact on the Company's net income, financial position or cash flows.

In February 2013, the FASB issued ASU No. 2013-02, "Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Comprehensive Income" ("ASU 2013-02"). ASU 2013-02 requires an entity to report the effect of significant reclassifications out of accumulated other comprehensive income on the respective line items in net income if the amount being reclassified is required under GAAP to be reclassified in its entirety to net income. For significant items not reclassified in their entirety to net income in the same reporting period, an entity is required to cross- reference other disclosures that provide additional detail about those amounts. The amendments in this ASU are effective for annual reporting periods, and interim periods within those annual reporting periods, beginning after December 15, 2012, which for the Company will be the first quarter of fiscal 2014. The adoption of ASU 2013-02 is not expected to have an impact on the Company's net income, financial position or cash flows.

In December 2011, the FASB issued ASU No. 2011-11, "Disclosures about Offsetting Assets and Liabilities," ("ASU 2011-11") that provides amendments for disclosures about offsetting assets and liabilities. The amendments require an entity to disclose information about offsetting and related arrangements to enable users of its financial statements to understand the effect of those arrangements on its financial position. Entities are required to disclose both gross information and net information about both instruments and transactions eligible for offset in the statement of financial position and instruments and transactions subject to an agreement similar to a master netting arrangement. On January 31, 2013, the FASB issued ASU No. 2013-01, "Clarifying the Scope of Disclosures about Offsetting Assets and Liabilities," which clarified that the scope of the disclosures is limited to include derivatives, sale and repurchase agreements and reverse sale and repurchase agreements, and securities borrowing and securities lending arrangements. The amendments are effective for annual reporting periods beginning on or after January 1, 2013, and interim periods within those annual periods. Disclosures required by the amendments should be provided retrospectively for all comparative periods presented. For the Company, the amendments are effective for the fiscal year ending September 27, 2014 (fiscal year 2014). The adoption of ASU 2011-11 is not expected to have a material impact on the Company's disclosures.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

3. Acquisitions and Divestitures

Fiscal 2012

On October 3, 2011, all the outstanding shares of Van Houtte USA Holdings, Inc., also known as the Van Houtte U.S. Coffee Service business or the "Filterfresh" business, were sold to ARAMARK Refreshment Services, LLC ("ARAMARK") in exchange for $149.5 million in cash. Approximately $4.4 million of cash was transferred to ARAMARK as part of the sale and $7.4 million was repaid to ARAMARK upon finalization of the purchase price, resulting in a net cash inflow related to the Filterfresh sale of $137.7 million. The Company recognized a gain on the sale of $26.3 million during the thirteen weeks ended December 24, 2011. Filterfresh had been included in the Canada segment.

As of September 24, 2011, all the assets and liabilities relating to the Filterfresh business were reported in the Consolidated Balance Sheet as assets and liabilities held-for-sale.

Filterfresh revenues and net income included in the Company's consolidated statement of operations were as follows (dollars in thousands, except per share data):

	For the period September 25, 2011 through October 3, 2011 (date of sale)	For the period December 17, 2010 (date of acquisition through) September 24, 2011
Net sales	$ 2,286	$ 90,855
Net income	$ 229	$ 12,263
Less income attributable to noncontrolling interests	20	1,051
Net income attributable to GMCR	$ 209	$ 11,212
Diluted net income per share	$ —	$ 0.07

After the disposition, the Company continues to sell coffee and brewers to Filterfresh, which prior to the sale of Filterfresh were eliminated and were not reflected in the Consolidated Statement of Operations. For fiscal 2012, the Company's sales to Filterfresh through October 3, 2011 (date of sale) that were eliminated in consolidation were $0.6 million. For fiscal 2011, the Company's sales to Filterfresh during the period December 17, 2010 (date of acquisition) through September 24, 2011 that were eliminated in consolidation were $22.2 million.

Fiscal 2011

LJVH Holdings, Inc. (including subsidiaries—Van Houtte)

On December 17, 2010, the Company acquired all of the outstanding capital stock of LJVH Holdings, Inc. ("LJVH" and together with its subsidiaries, "Van Houtte"), a coffee roaster headquartered in Montreal, Quebec, for $907.8 million, net of cash acquired. The acquisition was financed with cash on hand and a $1,450.0 million credit facility. Van Houtte's functional currency is the Canadian dollar. Van Houtte's operations are included in the Canada segment.

At the time of the acquisition, the Company accounted for all the assets relating to the Filterfresh business as held-for-sale.

The Van Houtte acquisition was accounted for under the acquisition method of accounting. The total purchase price of $907.8 million, net of cash acquired, was allocated to Van Houtte's net tangible assets and identifiable intangible assets based on their estimated fair values as of December 17, 2010. The fair value assigned to identifiable intangible assets acquired was determined primarily by using an income approach. The allocation of the purchase price is based upon a valuation determined using management's and the Company's estimates and assumptions. The table below represents the allocation of the purchase price to the acquired net assets of Van Houtte (in thousands):

	Total	Van Houtte Canadian Operations	Filterfresh Assets Held For Sale
Restricted cash	$ 500	$ 500	$ —
Accounts receivable	61,130	47,554	13,576
Inventories	42,958	36,691	6,267
Income taxes receivable	2,260	2,190	70
Deferred income taxes	4,903	3,577	1,326
Other current assets	5,047	4,453	594
Fixed assets	143,928	110,622	33,306
Intangible assets	375,099	355,549	19,550
Goodwill	472,331	409,493	62,838
Other long-term assets	1,577	962	615
Accounts payable and accrued expenses	(54,502)	(46,831)	(7,671)
Other short-term liabilities	(4,330)	(3,404)	(926)
Income taxes payable	(1,496)	(1,496)	—
Deferred income taxes	(117,086)	(104,866)	(12,220)
Notes payable	(2,914)	(1,770)	(1,144)
Other long-term liabilities	(2,452)	(1,683)	(769)
Non-controlling interests	(19,118)	(9,529)	(9,589)
	$ 907,835	$ 802,012	$ 105,823

The purchase price allocated to Filterfresh was the fair value, less the estimated direct costs to sell Filterfresh established at the acquisition date. The fair value of Filterfresh was estimated using an income approach, specifically the discounted cash flow ("DCF") method. Under the DCF method the fair value is calculated by discounting the projected after-tax cash flows for the business to present value. The income approach includes assumptions about the amount and timing of future cash flows using projections and other estimates. A discount rate based on an appropriate weighted average cost of capital was applied to the estimated future cash flows to estimate the fair value.

An income approach, specifically the DCF method, was used to value the noncontrolling interests.

Amortizable intangible assets acquired, valued at the date of acquisition, include approximately $263.1 million for customer relationships, $10.9 million for trademarks and trade names, $1.4 million for franchises and $0.3 million for technology. Indefinite-lived intangible assets acquired include approximately $99.4 million for the Van Houtte trademark which is not amortized. The definite lived intangible assets classified as held-for-sale were not amortized and approximated $19.5 million. Amortizable intangible assets are amortized on a straight-line basis over their respective useful lives, and the weighted-average amortization period is 10.8 years.

The cost of the acquisition in excess of the fair market value of the tangible and intangible assets acquired less liabilities assumed represents acquired goodwill. The acquisition of Van Houtte provides the Company with an expanded Canadian presence and manufacturing and distribution synergies, which provide the basis of the goodwill recognized with respect to the Van Houtte Canadian operations. As discussed above, the purchase price allocated to Filterfresh was the fair value, less the estimated direct costs to sell Filterfresh established at the acquisition date. The excess of the purchase price (fair value) allocated to Filterfresh over the fair value of the net tangible and identifiable intangible assets represents goodwill. Goodwill and intangible assets are reported in the Canada segment. The goodwill and intangible assets recognized are not deductible for tax purposes.

Acquisition costs were expensed as incurred and totaled approximately $10.7 million for the fiscal year ended September 24, 2011 and are included in general and administrative expenses for the Company.

Approximately $9.3 million of the purchase price was held in escrow at September 29, 2012 and was included in restricted cash. A corresponding amount of $9.3 million was included in other current liabilities as of September 29, 2012. None of the purchase price remained in escrow as of September 28, 2013, and therefore, there were no corresponding amounts included in other current liabilities.

The acquisition was completed on December 17, 2010 and accordingly results of operations from such date have been included in the Company's Statement of Operations. For fiscal 2011, the Van Houtte operations contributed an additional $321.4 million of consolidated revenue and $20.2 million of income before income taxes.

4. Segment Reporting

The Company has historically managed its operations through three business segments: the Specialty Coffee business unit ("SCBU"), the Keurig business unit ("KBU") and the Canadian business unit. Effective as of and as initially disclosed on May 8, 2013, the Company's Board of Directors authorized and approved a reorganization which consolidated U.S. operations to bring greater organizational efficiency and coordination across the Company. Due to this combination, the results of U.S. operations, formerly reported in the SCBU and KBU segments, are reported in one segment ("Domestic") and the results of Canadian operations are reported in the "Canada" segment. The Company's Chief Executive Officer ("CEO") serves as the Company's chief operating decision maker ("CODM") and there are two operating and reportable segments, Domestic and Canada.

As a result of the consolidation of U.S. operations, the Company has recast all historical segment results in order to: i) provide data that is on a basis consistent with the Company's new structure; ii) remove total assets from the Company's segment disclosures as only consolidated asset information is provided to and used by the CODM for use in decision making (in connection with the reorganization, segment asset information is neither provided to nor used by the CODM); and iii) reflect all sustainability expenses in Corporate as the Company no longer allocates those expenses to its operating segments.

For a description of the operating segments, see Note 1, *Nature of Business and Organization*.

Management evaluates the performance of the Company's operating segments based on several factors, including net sales to external customers and operating income. Net sales are recorded on a segment basis and intersegment sales are eliminated as part of the financial consolidation process. Operating income represents gross profit less selling, operating, general and administrative expenses. The Company's manufacturing operations occur within both the Domestic and Canada segments, and the costs of manufacturing are recognized in cost of sales in the operating segment in which the sale occurs. Information system technology services are mainly centralized while finance and accounting functions are primarily decentralized. Expenses consisting primarily of compensation and depreciation related to certain centralized administrative functions including information system technology are allocated to the operating segments. Expenses not specifically related to an operating segment are presented under "Corporate Unallocated." Corporate Unallocated expenses are comprised mainly of the compensation and other related expenses of certain of the Company's senior executive officers and other selected employees who perform duties related to the entire enterprise. Corporate Unallocated expenses also include depreciation for corporate headquarters, sustainability expenses, interest expense not directly attributable to an operating segment, the majority of foreign exchange gains or losses, legal expenses and compensation of the Board of Directors. The Company does not disclose assets or property additions by segment as only consolidated asset information is provided to the CODM for use in decision making.

Effective for the first quarter of fiscal 2013, the Company changed its measure for reporting segment profitability and for evaluating segment performance and the allocation of Company resources from income before taxes to operating income (loss). Prior to the first quarter of fiscal 2013, the Company disclosed each operating and reportable segment's income before taxes to report segment profitability. Segment disclosures for prior periods have been recast to reflect operating income by segment in place of income before taxes. The CODM measures segment performance based upon operating income which excludes interest expense and interest expense is not provided to the CODM by segment. Accordingly, interest expense by segment is no longer presented.

Effective with the beginning of the Company's third quarter of fiscal 2011, sales between operating segments are recorded at cost and the Domestic segment no longer records royalty income from the Canada segment on shipments of portion packs. Prior to the third quarter of fiscal 2011, the Company recorded intersegment sales and purchases of brewer and K-Cup® packs at a markup. As a result of the change, intersegment sales have no impact on segment operating income (loss) and effective with the first quarter of fiscal 2013, the Company no longer discloses intersegment sales. Each operating segment's net sales for fiscal years 2013 and 2012 include only net sales to external customers.

The selected financial data for segment disclosures for fiscal 2011 was not recast for the above changes related to intersegment sales and royalty income. The following table summarizes the approximate net effect of the above changes on segment income before taxes for fiscal 2013, 2012 and 2011 as a result of the above changes (in thousands). The net effect represents the net mark-up on sales between the segments as well as the Domestic segment royalty income on the sale of portion packs by the Canada segment. The Company used historical mark-up percentages and royalty rates to calculate the net effect.

Increase (decrease) in operating income (loss)	**Fiscal 2013**	**Fiscal 2012**	**Fiscal 2011**
Domestic	$ (38,755)	$ 20,068	$ (29,584)
Canada	39,057	(19,084)	22,157
Corporate—Unallocated	—	—	—
Eliminations	(302)	(984)	7,427
Consolidated	$ —	$ —	$ —

The following tables summarize selected financial data for segment disclosures for fiscal 2013, 2012 and 2011.

	For Fiscal 2013 (Dollars in thousands)			
	Domestic	**Canada**	**Corporate-Unallocated**	**Consolidated**
Net sales	$ 3,725,008	$ 633,092	$ —	$ 4,358,100
Operating income (loss)	$ 826,092	$ 87,674	$ (148,539)	$ 765,227
Depreciation and amortization	$ 162,359	$ 65,334	$ 1,500	$ 229,193
Stock compensation expense	$ 9,909	$ 2,519	$ 13,653	$ 26,081

	For Fiscal 2012 (Dollars in thousands)			
	Domestic	**Canada**	**Corporate-Unallocated**	**Consolidated**
Net sales	$ 3,233,674	$ 625,524	$ —	$ 3,859,198
Operating Income (loss)	$ 576,949	$ 76,198	$ (84,251)	$ 568,896
Depreciation and amortization	$ 116,722	$ 62,984	$ 1,941	$ 181,647
Stock compensation expense	$ 7,808	$ 1,890	$ 8,170	$ 17,868

	For Fiscal 2011 (Dollars in thousands)				
	Domestic	**Canada**	**Corporate-Unallocated**	**Eliminations**	**Consolidated**
Sales to unaffiliated customers	$ 2,152,432	$ 498,467	$ —	$ —	$ 2,650,899
Intersegment sales	$ 36,855	$ 98,347	$ —	$ (135,202)	$ —
Net sales	$ 2,189,287	$ 596,814	$ —	$ (135,202)	$ 2,650,899
Operating Income	$ 399,638	$ 67,727	$ (73,259)	$ (25,193)	$ 368,913
Depreciation and amortization	$ 68,439	$ 45,193	$ 4	$ —	$ 113,636
Stock compensation expense	$ 5,519	$ 470	$ 4,372	$ —	$ 10,361

Geographic Information

Net sales are attributed to countries based on the location of the customer. Information concerning net sales of principal geographic areas is as follows (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Net Sales:			
United States	$ 3,721,182	$ 3,248,543	$ 2,248,811
Canada	634,360	609,828	400,682
Other	2,558	827	1,406
	$ 4,358,100	$ 3,859,198	$ 2,650,899

Sales to customers that represented more than 10% of the Company's net sales included Wal-Mart, representing approximately 14% and 12% of consolidated net sales for fiscal years 2013 and 2012, respectively, Costco, representing approximately 11% of consolidated net sales for fiscal 2013, and Bed Bath & Beyond, representing approximately 11% of consolidated net sales for fiscal 2011. Sales to Wal-Mart in fiscal years 2013 and 2012 were through both segments; sales to Costco in fiscal 2013 were through both segments; and sales to Bed Bath & Beyond, Inc., in fiscal 2011 were primarily through the Domestic segment.

Information concerning long-lived assets of principal geographic area is as follows (in thousands) as of:

	September 28, 2013	September 29, 2012
Fixed Assets, net:		
United States	$ 844,471	$ 783,075
Canada	135,440	143,640
Other	5,652	17,581
	$ 985,563	$ 944,296

Net Sales by Major Product Category

Net sales by major product category (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Portion Packs	$ 3,187,350	$ 2,708,886	$ 1,704,021
Brewers and Accessories	827,570	759,805	524,709
Other Products and Royalties	343,180	390,507	422,169
	$ 4,358,100	$ 3,859,198	$ 2,650,899

5. Inventories

Inventories consisted of the following (in thousands) as of:

	September 28, 2013	September 29, 2012
Raw materials and supplies	$ 182,882	$ 229,927
Finished goods	493,207	538,510
	$ 676,089	$ 768,437

As of September 28, 2013, the Company had approximately $245.1 million in green coffee purchase commitments, of which approximately 84% had a fixed price. These commitments primarily extend through fiscal 2015. The value of the variable portion of these commitments was calculated using an average "C" price of coffee of $1.24 per pound at September 28, 2013. In addition to its green coffee commitments, the Company had approximately $141.8 million in fixed price brewer and related accessory purchase commitments and $536.1 million in production raw materials commitments at September 28, 2013. The Company believes, based on relationships established with its suppliers, that the risk of non-delivery on such purchase commitments is remote.

As of September 28, 2013, minimum future inventory purchase commitments were as follows (in thousands):

Fiscal Year	Inventory Purchase Obligations
2014	$ 456,955
2015	124,588
2016	119,565
2017	110,837
2018	111,086
	$ 923,031

6. Fixed Assets

Fixed assets consisted of the following (in thousands) as of:

	Useful Life in Years	September 28, 2013	September 29, 2012
Production equipment	1–15	$ 680,457	$ 544,491
Coffee service equipment	3–7	59,169	63,722
Computer equipment and software	1–6	146,246	111,441
Land	Indefinite	11,520	11,740
Building and building improvements	4–30	134,495	83,172
Furniture and fixtures	1–15	33,975	28,477
Vehicles	4–5	11,786	10,306
Leasehold improvements	1–20 or remaining life of lease, whichever is less	98,990	72,755
Assets acquired under capital leases	5–15	41,200	51,047
Construction-in-progress		202,940	234,442
Total fixed assets		$ 1,420,778	$ 1,211,593
Accumulated depreciation		(435,215)	(267,297)
		$ 985,563	$ 944,296

Assets acquired under capital leases, net of accumulated amortization, were $36.9 million and $47.0 million at September 28, 2013 and September 29, 2012, respectively.

Total depreciation and amortization expense relating to all fixed assets was $183.8 million, $135.7 million and $72.3 million for fiscal years 2013, 2012, and 2011, respectively.

Assets classified as construction-in-progress are not depreciated, as they are not ready for productive use.

As of September 28, 2013, construction-in-progress includes $21.1 million relating to properties under construction where the Company is deemed to be the accounting owner, even though the Company is not the legal owner. See footnote 19, *Commitments and Contingencies*.

During fiscal years 2013, 2012 and 2011, $6.1 million, $2.8 million, and $2.6 million, respectively, of interest expense was capitalized.

7. Goodwill and Intangible Assets

The following represented the change in the carrying amount of goodwill by segment for fiscal 2013 and 2012 (in thousands):

	Domestic	Canada	Total
Balance as of September 24, 2011	$ 386,416	$ 402,889	$ 789,305
Reassignment of Timothy's goodwill	(17,063)	17,063	—
Foreign currency effect	—	18,771	18,771
Balance as of September 29, 2012	$ 369,353	$ 438,723	$ 808,076
Foreign currency effect	—	(19,892)	(19,892)
Balance as of September 28, 2013	$ 369,353	$ 418,831	$ 788,184

Indefinite-lived intangible assets included in the Canada operating segment consisted of the following (in thousands) as of:

	September 28, 2013	September 29, 2012
Trade names	$ 97,740	$ 102,381

Effective May 8, 2013, the Company combined the results of its U.S. operations, formerly reported in the SCBU and KBU segments, into one Domestic segment.

Effective September 25, 2011, Timothy's is included in the Canada segment. Prior to September 25, 2011, Timothy's was included in the Domestic segment. This resulted in a re-assignment of goodwill of $17.1 million from the Domestic segment to the Canada segment using a relative fair value approach. The amount of goodwill reassigned was determined based on the relative fair values of Timothy's and the Domestic segment.

The Company conducted its annual impairment test of goodwill and indefinite-lived intangible assets as of September 28, 2013, and elected to bypass the optional qualitative assessment and performed a quantitative impairment test. Goodwill was evaluated for impairment at the following reporting unit levels:

- Domestic
- Canada—Roasting and Retail
- Canada—Coffee Services Canada

For the goodwill impairment test, the fair value of the reporting units was estimated using the Discounted Cash Flow ("DCF") method. A number of significant assumptions and estimates are involved in the application of the DCF method including discount rate, sales volume and prices, costs to produce and working capital changes. For the indefinite-lived intangible assets impairment test, the fair value of the trade name was estimated using the Relief-from-Royalty Method. This method estimates the savings in royalties the Company would otherwise have had to pay if it did not own the trade name and had to license the trade name from a third-party with rights of use substantially equivalent to ownership. The fair value of the trade name is the present value of the future estimated after-tax royalty payments avoided by ownership, discounted at an appropriate, risk-adjusted rate of return. For goodwill and indefinite-lived intangible impairment tests, the Company used a royalty rate of 3.0%, an income tax rate of 38.0% for the United States and 27.5% for Canada, and discount rates ranging from 13% to 14%. There was no impairment of goodwill or indefinite-lived intangible assets in fiscal years 2013, 2012, or 2011.

Intangible Assets Subject to Amortization

Definite-lived intangible assets consisted of the following (in thousands) as of:

		September 28, 2013		September 29, 2012	
	Useful Life in Years	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Acquired technology	4–10	$ 21,609	$ (17,123)	$ 21,622	$ (15,433)
Customer and roaster agreements	8–11	26,977	(19,750)	27,323	(16,796)
Customer relationships	2–16	414,967	(113,061)	430,178	(79,168)
Trade names	9–11	37,200	(13,353)	38,000	(9,785)
Non-compete agreements	2–5	374	(364)	374	(344)
Total		$ 501,127	$ (163,651)	$ 517,497	$ (121,526)

Definite-lived intangible assets are amortized on a straight-line basis over the period of expected economic benefit. Total amortization expense was $45.4 million, $46.0 million, and $41.3 million for fiscal years 2013, 2012, and 2011, respectively. The weighted average remaining life for definite-lived intangibles at September 28, 2013 is 8.3 years.

The estimated aggregate amortization expense over each of the next five years and thereafter, is as follows (in thousands):

2014	$ 44,361
2015	42,807
2016	42,081
2017	40,686
2018	40,686
Thereafter	126,855

8. Noncontrolling Interests

The changes in the liability and temporary equity attributable to redeemable NCIs for the three fiscal years in the period ended September 28, 2013 are as follows (in thousands):

	Liability attributable to mandatorily redeemable noncontrolling interests	Equity attributable to redeemable noncontrolling interests
Balance at September 25, 2010	$ —	$ —
Purchase noncontrolling interests	—	19,118
Net income	—	1,547
Adjustment to redemption value	—	1,618
Cash distributions	—	(1,063)
Other comprehensive loss, net of tax	—	(186)
Balance at September 24, 2011	$ —	$ 21,034
Disposition of noncontrolling interest	—	(10,331)
Redeemable noncontrolling interest reclassified to other long-term liabilities	4,708	(4,708)
Net income	60	812
Adjustment to redemption value	167	3,155
Cash distributions	(204)	(513)
Other comprehensive loss, net of tax	197	455
Balance at September 29, 2012	$ 4,928	$ 9,904
Net income	462	409
Adjustment to redemption value	372	2,025
Cash distributions	(583)	(823)
Other comprehensive loss, net of tax	(245)	(470)
Balance at September 28, 2013	$ 4,934	$ 11,045

As of September 28, 2013 and September 29, 2012, the liability attributable to mandatorily redeemable noncontrolling interests was included as a component of *Other current liabilities* and *Other long-term liabilities*, respectively, in the Consolidated Balance Sheets.

9. Product Warranties

The Company offers a one-year warranty on all Keurig® Single Cup brewers it sells. The Company provides for the estimated cost of product warranties, primarily using historical information and current repair or replacement costs, at the time product revenue is recognized. Brewer failures may arise in the later part of the warranty period, and actual warranty costs may exceed the reserve. As the Company has grown, it has added significantly to its product testing, quality control infrastructure and overall quality processes. Nevertheless, as the Company continues to innovate, and its products become more complex, both in design and componentry, product performance may tend to modulate, causing warranty rates to possibly fluctuate going forward. As a result, future warranty claims rates may be higher or lower than the Company is currently experiencing and for which the Company is currently providing in its warranty reserve.

The changes in the carrying amount of product warranties for fiscal years 2013 and 2012 are as follows (in thousands):

	Fiscal 2013	Fiscal 2012
Balance, beginning of year	$ 20,218	$ 14,728
Provision related to current period	20,447	47,026
Change in estimate	(12,720)	(1,287)
Usage	(20,141)	(40,249)
Balance, end of year	$ 7,804	$ 20,218

During fiscal years 2013 and 2012, the Company recovered approximately $0.8 million and $8.3 million respectively, as reimbursement from suppliers related to warranty issues. The recoveries are under an agreement with a supplier and are recorded as a reduction to warranty expense. The recoveries are not reflected in the provision charged to income in the table above.

10. Long-Term Debt

Long-term debt outstanding consists of the following (in thousands) as of:

	September 28, 2013	September 29, 2012
Revolving credit facility, USD	$ —	$ 120,000
Revolving credit facility, multicurrency	—	108,787
Term loan A	170,937	242,188
Other	2,213	2,700
Total long-term debt	$ 173,150	$ 473,675
Less current portion	12,929	6,691
Long-term portion	$ 160,221	$ 466,984

Under the Company's current credit facility ("Restated Credit Agreement"), the Company maintains senior secured credit facilities consisting of (i) an $800.0 million U.S. revolving credit facility, (ii) a $200.0 million alternative currency revolving credit facility, and (iii) a term loan A facility. The Restated Credit Agreement also provides for an increase option for an aggregate amount of up to $500.0 million.

The term loan A facility requires quarterly principal repayments. The term loan and revolving credit borrowings bear interest at a rate equal to an applicable margin plus, at our option, either (a) a eurodollar rate determined by reference to the cost of funds for deposits for the interest period and currency relevant to such borrowing, adjusted for certain costs, or (b) a base rate determined by reference to the highest of (1) the federal funds rate plus 0.50%, (2) the prime rate announced by Bank of America, N.A. from time to time and (3) the eurodollar rate plus 1.00%. The applicable margin under the Restated Credit Agreement with respect to term loan A and revolving credit facilities is a percentage per annum varying from 0.5% to 1.0% for base rate loans and 1.5% to 2.0% for eurodollar loans, based upon the Company's leverage ratio. The Company's average effective interest rate as of September 28, 2013 and September 29, 2012 was 3.5% and 2.9%, respectively, excluding amortization of deferred financing charges and including the effect of interest swap agreements. The Company also pays a commitment fee of 0.2% on the average daily unused portion of the revolving credit facilities.

All the assets of the Company and its domestic wholly-owned material subsidiaries are pledged as collateral under the Restated Credit Agreement. The Restated Credit Agreement contains customary negative covenants, subject to certain exceptions, including limitations on: liens; investments; indebtedness; merger and consolidations; asset sales; dividends and distributions or repurchases of the Company's capital stock; transactions with affiliates; certain burdensome agreements; and changes in the Company's lines of business.

The Restated Credit Agreement requires the Company to comply on a quarterly basis with a consolidated leverage ratio and a consolidated interest coverage ratio. As of September 28, 2013 and throughout fiscal year 2013, the Company was in compliance with these covenants. In addition, the Restated Credit Agreement contains certain mandatory prepayment requirements and customary events of default.

As of September 28, 2013 and September 29, 2012, outstanding letters of credit under the Restated Credit Agreement, totaled $5.0 million and $3.7 million, respectively. No amounts have been drawn against the letters of credit as of September 28, 2013 and September 29, 2012.

In connection with the Restated Credit Agreement, the Company incurred debt issuance costs of $46.0 million which were deferred and included in *Other Long-Term Assets* on the Consolidated Balance Sheet and amortized as interest expense over the life of the respective loan using a method that approximates the effective interest rate method. The Company incurred a loss of $19.7 million in fiscal 2011 primarily on the extinguishment of the term loan B facility under the credit agreement that immediately preceded the Restated Credit Agreement ("Credit Agreement") and the extinguishment of a former credit facility that preceded the Credit Agreement resulting from the write-off of debt issuance costs and the original issue discount. The loss on the extinguishment of debt is included in *Interest Expense* on the Consolidated Statements of Operations.

The Company enters into interest rate swap agreements to limit a portion of its exposure to variable interest rates by entering into interest rate swap agreements which effectively fix the rates. In accordance with the interest rate swap agreements and on a monthly basis, interest expense is calculated based on the floating 30-day Libor rate and the fixed rate. If interest expense as calculated is greater based on the 30-day Libor rate, the interest rate swap counterparty pays the difference to the Company; if interest expense as calculated is greater based on the fixed rate, the Company pays the difference to the interest rate swap counterparty. See Note 11, *Derivative Financial Instruments*.

Below is a summary of the Company's derivative instruments in effect as of September 28, 2013 mitigating interest rate exposure of variable-rate borrowings (in thousands):

Derivative Instrument	Hedged Transaction	Notional Amount of Underlying Debt	Fixed Rate Received	Maturity (Fiscal Year)
Swap	30-day Libor	20,000	2.54%	2016
Swap	30-day Libor	30,000	2.54%	2016
Swap	30-day Libor	50,000	2.54%	2016
Swap	30-day Libor	30,000	2.54%	2016
		$ 130,000		

In fiscal years 2013, 2012 and 2011 the Company paid approximately $3.4 million, $4.7 million and $3.8 million, respectively, in additional interest expense pursuant to the interest rate swap agreements.

Maturities

Scheduled maturities of long-term debt are as follows (in thousands):

Fiscal Year	
2014	$ 12,929
2015	19,165
2016	140,064
2017	377
2018	395
Thereafter	220
	$ 173,150

11. Derivative Financial Instruments

Cash Flow Hedges

The Company is exposed to certain risks relating to ongoing business operations. The primary risks that are mitigated by financial instruments are interest rate risk, commodity price risk and foreign currency exchange rate risk. The Company uses interest rate swaps to mitigate interest rate risk associated with the Company's variable-rate borrowings, enters into coffee futures contracts to hedge future coffee purchase commitments of green coffee with the objective of minimizing cost risk due to market fluctuations, and uses foreign currency forward contracts to hedge the purchase and payment of green coffee purchase commitments denominated in non-functional currencies.

The Company designates these contracts as cash flow hedges and measures the effectiveness of these derivative instruments at each balance sheet date. The changes in the fair value of these instruments are classified in accumulated other comprehensive income (loss). The gains or loss on these instruments is reclassified from OCI into earnings in the same period or periods during which the hedged transaction affects earnings. If it is determined that a derivative is not highly effective, the gain or loss is reclassified into earnings.

Fair Value Hedges

The Company enters into foreign currency forward contracts to hedge certain recognized liabilities in currencies other than the Company's functional currency. The Company designates these contracts as fair value hedges and measures the effectiveness of the derivative instruments at each balance sheet date. The changes in the fair value of these instruments along with the changes in the fair value of the hedged liabilities are recognized in net gains or losses on foreign currency on the consolidated statements of operations.

Other Derivatives

The Company is also exposed to certain foreign currency and interest rate risks on an intercompany note with a foreign subsidiary denominated in Canadian currency. At September 28, 2013, the Company has approximately two years remaining on a CDN $120.0 million, Canadian cross currency swap to exchange interest payments and principal on the intercompany note. This cross currency swap is not designated as a hedging instrument for accounting purposes and is recorded at fair value, with the changes in fair value recognized in the Consolidated Statements of Operations. Gains and losses resulting from the change in fair value are largely offset by the financial impact of the remeasurement of the intercompany note. In accordance with the cross currency swap agreement, on a quarterly basis, the Company pays interest based on the three month Canadian Bankers Acceptance rate and receives interest based on the three month U.S. Libor rate. The Company incurred $1.7 million, $1.8 million, and $1.2 million in additional interest expense pursuant to the cross currency swap agreement during fiscal 2013, 2012, and 2011 respectively.

In conjunction with the repayment of the Company's term loan B facility under the Credit Agreement (See Note 10, *Long-Term Debt*), the interest rate cap previously used to mitigate interest rate risk associated with the Company's variable-rate borrowings on the term loan B no longer qualified for hedge accounting treatment. As a result, a loss of $0.4 million, gross of tax, was reclassified from OCI to income during fiscal 2011.

The Company occasionally enters into foreign currency forward contracts and coffee futures contracts that qualify as derivatives, and are not designated as hedging instruments for accounting purposes in addition to the foreign currency forward contracts and coffee futures contracts noted above. Contracts that are not designated as hedging instruments are recorded at fair value with the changes in fair value recognized in the Consolidated Statements of Operations.

The Company does not hold or use derivative financial instruments for trading or speculative purposes.

The Company is exposed to credit loss in the event of nonperformance by the counterparties to these financial instruments, however, nonperformance is not anticipated.

The following table summarizes the fair value of the Company's derivatives included on the Consolidated Balance Sheets (in thousands) as of:

	September 28, 2013	September 29, 2012	Balance Sheet Classification
Derivatives designated as hedges:			
Interest rate swaps	$ (6,004)	$ (9,019)	Other current liabilities
Coffee futures	(3,809)	(342)	Other current liabilities
Foreign currency forward contracts	(141)	—	Other current liabilities
Foreign currency forward contracts	13	—	Other current assets
	(9,941)	(9,361)	
Derivatives not designated as hedges:			
Cross currency swap	(1,253)	(7,242)	Other current liabilities
	(1,253)	(7,242)	
Total	$ (11,194)	$ (16,603)	

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table summarizes the coffee futures contracts outstanding as of September 28, 2013 (in thousands, except for average contract price and "C" price):

Coffee Pounds	Average Contract Price	"C" Price	Maturity	Fair Value of Futures Contracts
375	$ 1.50	$ 1.14	December 2013	$ (138)
5,887	$ 1.39	$ 1.17	March 2014	(1,308)
11,438	$ 1.30	$ 1.19	May 2014	(1,222)
10,875	$ 1.32	$ 1.21	July 2014	(1,141)
28,575				$ (3,809)

The following table summarizes the coffee futures contracts outstanding as of September 29, 2012 (in thousands, except for average contract price and "C" price):

Coffee Pounds	Average Contract Price	"C" Price	Maturity	Fair Value of Futures Contracts
938	$ 1.92	$ 1.74	December 2012	$ (169)
938	$ 1.96	$ 1.78	March 2013	(171)
675	$ 1.80	$ 1.80	May 2013	(1)
375	$ 1.83	$ 1.83	July 2013	$ (1)
262	$ 1.86	$ 1.86	September 2013	$ 0
3,188				$ (342)

The following table summarizes the amount of gain (loss), gross of tax, on financial instruments that qualify for hedge accounting included in OCI (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Cash Flow Hedges:			
Interest rate swaps	$ 3,014	$ 1,250	$ (7,928)
Coffee futures	(6,617)	(2,484)	407
Forward currency forward contracts	(129)	—	—
Total	$ (3,732)	$ (1,234)	$ (7,521)

The following table summarizes the amount of gain (loss), gross of tax, reclassified from OCI to income (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011	
Interest rate cap	$ —	$ —	$ (392)	Gain (loss) on financial instruments, net
Coffee futures	(1,482)	(1,359)	(27)	Cost of Sales
Forward currency forward contracts	(2)	—	—	(Loss) gain on foreign currency, net
Total	$ (1,484)	$ (1,359)	$ (419)	

The Company expects to reclassify $3.5 million of losses, net of tax, from OCI to earnings on coffee derivatives within the next twelve months.

See note 14, *Stockholders' Equity* for a reconciliation of derivatives in beginning accumulated other comprehensive income (loss) to derivatives in ending accumulated other comprehensive income (loss).

The following table summarizes the amount of gain (loss), gross of tax, on fair value hedges and related hedged items (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011	Location of gain (loss) recognized in income on derivative
Foreign currency forward contracts				
Net loss on hedging derivatives	$ (10)	$ (48)	$ —	(Loss) gain on foreign currency, net
Net gain on hedged items	$ 10	$ 48	$ —	(Loss) gain on foreign currency, net

Net losses on financial instruments not designated as hedges for accounting purposes recorded in gain (loss) on financial instruments, net, is as follows (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Net gain (loss) on cross currency swap	$ 5,513	$ (4,918)	$ (2,324)
Net gain (loss) on coffee futures	—	7	(250)
Net loss on interest rate cap	—	(34)	(615)
Net loss on foreign currency option and forward contracts	—	—	(3,056)
Total	$ 5,513	$ (4,945)	$ (6,245)

The net loss on foreign currency contracts were primarily related to contracts entered into to mitigate the risk associated with the Canadian denominated purchase price of Van Houtte in fiscal 2011.

12. Fair Value Measurements

The Company measures fair value as the selling price that would be received for an asset, or paid to transfer a liability, in the principal or most advantageous market on the measurement date. The hierarchy established by the Financial Accounting Standards Board prioritizes fair value measurements based on the types of inputs used in the valuation technique. The inputs are categorized into the following levels:

Level 1—Observable inputs such as quoted prices in active markets for identical assets or liabilities.

Level 2—Inputs other than quoted prices that are observable, either directly or indirectly, which include quoted prices for similar assets or liabilities in active markets and quoted prices for identical assets or liabilities in markets that are not active.

Level 3—Unobservable inputs not corroborated by market data, therefore requiring the entity to use the best available information, including management assumptions.

The following table summarizes the fair values and the levels used in fair value measurements as of September 28, 2013 for the Company's financial (liabilities) assets (in thousands):

	Fair Value Measurements Using		
	Level 1	Level 2	Level 3
Derivatives:			
Interest rate swaps	$ —	$ (6,004)	$ —
Cross currency swap	—	(1,253)	—
Coffee futures	—	(3,809)	—
Foreign currency forward contracts	—	(128)	—
Total	$ —	$ (11,194)	$ —

The following table summarizes the fair values and the levels used in fair value measurements as of September 29, 2012 for the Company's financial liabilities (in thousands):

	Fair Value Measurements Using		
	Level 1	**Level 2**	**Level 3**
Derivatives:			
Interest rate swaps	$ —	$ (9,019)	$ —
Cross currency swap	—	(7,242)	—
Coffee futures	—	(342)	—
Foreign currency forward contracts	—	—	—
Total	$ —	$ (16,603)	$ —

Level 2 derivative financial instruments use inputs that are based on market data of identical (or similar) instruments, including forward prices for commodities, interest rates curves and spot prices that are in observable markets. Derivatives recorded on the balance sheet are at fair value with changes in fair value recorded in OCI for cash flow hedges and in the Consolidated Statements of Operations for fair value hedges and derivatives that do not qualify for hedge accounting treatment.

Derivatives

Derivative financial instruments include coffee futures contracts, interest rate swap agreements, a cross-currency swap agreement and foreign currency forward contracts. The Company has identified significant concentrations of credit risk based on the economic characteristics of the instruments that include interest rates, commodity indexes and foreign currency rates and selectively enters into the derivative instruments with counterparties using credit ratings.

To determine fair value, the Company utilizes the market approach valuation technique for coffee futures and foreign currency forward contracts and the income approach for interest rate and cross currency swap agreements. The Company's fair value measurements include a credit valuation adjustment for the significant concentrations of credit risk.

As of September 28, 2013, the amount of loss estimated by the Company due to credit risk associated with the derivatives for all significant concentrations was not material based on the factors of an industry recovery rate and a calculated probability of default.

Long-Term Debt

The carrying value of long-term debt was $173.2 million and $473.7 million as of September 28, 2013 and September 29, 2012, respectively. The inputs to the calculation of the fair value of long-term debt are considered to be Level 2 within the fair value hierarchy, as the measurement of fair value is based on the net present value of calculated interest and principal payments, using an interest rate derived from a fair market yield curve adjusted for the Company's credit rating. The carrying value of long-term debt approximates fair value as the interest rate on the debt is based on variable interest rates that reset every 30 days.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

13. Income Taxes

Income before income taxes and the provision for income taxes for fiscal years 2013, 2012 and 2011, consist of the following (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Income before income taxes:			
United States	$ 675,438	$ 486,258	$ 248,108
Foreign	65,436	89,883	54,639
Total income before income taxes	$ 740,874	$ 576,141	$ 302,747
Income tax expense:			
United States federal:			
Current	$ 202,006	$ 75,932	$ 75,225
Deferred	(8,654)	74,042	(3,327)
	193,352	149,974	71,898
State and local:			
Current	47,930	40,270	13,939
Deferred	(1,695)	(712)	(1,758)
	46,235	39,558	12,181
Total United States	239,587	189,532	84,079
Foreign:			
Current	29,901	26,860	21,306
Deferred	(12,717)	(3,751)	(3,686)
Total foreign	17,184	23,109	17,620
Total income tax expense	$ 256,771	$ 212,641	$ 101,699

Net deferred tax liabilities consist of the following (in thousands) as of:

	September 28, 2013	September 29, 2012
Deferred tax assets:		
Section 263A capitalized expenses	$ 1,876	$ 2,150
Deferred hedging losses	4,774	3,919
Deferred compensation	13,632	11,534
Net operating loss carryforward	—	1,017
Capital loss carryforward	1,418	1,418
Valuation allowance—capital loss carryforward	(1,418)	(1,418)
Warranty, obsolete inventory and bad debt allowance	32,692	27,421
Tax credit carryforwards	3,651	3,301
Other reserves and temporary differences	15,558	12,412
Gross deferred tax assets	72,183	61,754
Deferred tax liabilities:		
Prepaid expenses	(2,994)	(2,367)
Depreciation	(125,504)	(123,044)
Intangible assets	(138,262)	(144,329)
Other reserves and temporary differences	(237)	(10,994)
Gross deferred tax liabilities	(266,997)	(280,734)
Net deferred tax liabilities	$ (194,814)	$ (218,980)

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

A reconciliation for continuing operations between the amount of reported income tax expense and the amount computed using the U.S. Federal Statutory rate of 35% is as follows (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Tax at U.S. Federal Statutory rate	$ 259,306	$ 201,692	$ 105,961
Increase (decrease) in rates resulting from:			
Foreign tax rate differential	(13,087)	(18,072)	(9,289)
Non-deductible stock compensation expense	2,700	1,024	1,761
State taxes, net of federal benefit	31,869	27,114	11,276
Provincial taxes	7,878	10,591	6,309
Domestic production activities deduction	(23,558)	(9,245)	(7,831)
Acquisition costs	—	—	4,158
Federal tax credits	(4,506)	(282)	(962)
Release of capital loss valuation allowance	—	(3,071)	(6,194)
Other	(3,831)	2,890	(3,490)
Tax at effective rates	$ 256,771	$ 212,641	$ 101,699

As of September 28, 2013, the Company had a $17.7 million state capital loss carryforward and a state net operating loss carryforward of $11.5 million available to be utilized against future taxable income for years through fiscal 2015 and 2029, respectively, subject to annual limitation pertaining to change in ownership rules under the Internal Revenue Code of 1986, as amended (the "Code"). Based upon earnings history, the Company concluded that it is more likely than not that the net operating loss carryforward will be utilized prior to its expiration but that the capital loss carryforward will not. The Company has recorded a $1.4 million valuation allowance against the entire deferred tax asset balance for the capital loss carryforward

The total amount of unrecognized tax benefits as of September 28, 2013 and September 29, 2012 was $23.3 million and $24.0 million, respectively. The amount of unrecognized tax benefits at September 28, 2013 that would impact the effective tax rate if resolved in favor of the Company is $19.7 million. As a result of prior acquisitions, the Company is indemnified for up to $16.6 million of the total reserve balance, and the indemnification is capped at CDN $37.9 million. If these unrecognized tax benefits are resolved in favor of the Company, the associated indemnification receivable, recorded in other long-term assets would be reduced accordingly. As of September 28, 2013 and September 29, 2012, accrued interest and penalties of $2.0 million and $0.6 million, respectively, were included in the Consolidated Balance Sheets. The Company recognizes interest and penalties in income tax expense. The Company released $1.5 million of unrecognized tax benefits in the fourth quarter of fiscal 2013 due to the expiration of the statute of limitations. Income tax expense included $0.4 million, $0.2 million and $0.3 million of interest and penalties for fiscal 2013, 2012, and 2011, respectively.

A reconciliation of increases and decreases in unrecognized tax benefits, including interest and penalties, is as follows (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Gross tax contingencies—balance, beginning of year	$ 23,956	$ 24,419	$ 5,480
Increases from positions taken during prior periods	438	2,864	—
Decreases from positions taken during prior periods	—	(4,093)	(236)
Increases from positions taken during current periods	2,709	906	19,175
Decreases resulting from the lapse of the applicable statute of limitations	(3,820)	(140)	—
Gross tax contingencies—balance, end of year	$ 23,283	$ 23,956	$ 24,419

The Company expects to release $3.4 million of unrecognized tax benefits during fiscal 2014 due to the expiration of the statute of limitations.

As of September 28, 2013, the Company had approximately $155.5 million of undistributed international earnings, most of which are Canadian-sourced. With the exception of the repayment of intercompany debt, all earnings of the Company's foreign subsidiaries are considered indefinitely reinvested and no U.S. deferred taxes have been provided on those earnings. If these amounts were distributed to the U.S. in the form of dividends or otherwise, the Company would be subject to additional U.S. income taxes, which could be material. Determination of the amount of any unrecognized deferred income tax on these earnings is not practicable because such liability, if any, is dependent on circumstances existing if and when remittance occurs.

In the normal course of business, the Company is subject to tax examinations by taxing authorities both inside and outside the United States. The Company is currently being examined by the Internal Revenue Service for its fiscal year ended September 25, 2010. With some exceptions, the Company is no longer subject to examinations with respect to returns filed for fiscal years prior to 2006.

14. Stockholders' Equity

Stock Issuances

On May 11, 2011, the Company issued 9,479,544 shares of its common stock, par value $0.10 per share, at $71.00 per share, which included 1,290,000 shares purchased by the underwriters pursuant to an overallotment option. The Company also completed a concurrent private placement of 608,342 shares of its common stock to Luigi Lavazza S.p.A. ("Lavazza") at $68.34 per share, pursuant to the Common Stock Purchase Agreement entered into between the Company and Lavazza on May 6, 2011 in accordance with the September 28, 2010 agreement discussed below. The aggregate net proceeds to the Company from the public offering and concurrent private placement were approximately $688.9 million, net of underwriting discounts and commissions and offering expenses. The Company used the proceeds to repay a portion of the outstanding debt under its credit facility and for general corporate purposes.

On September 28, 2010, the Company sold 8,566,649 shares of its common stock, par value $0.10 per share, to Lavazza for aggregate gross proceeds of $250.0 million. The sale was recorded to stockholders' equity net of transaction related expenses of approximately $0.5 million. The shares were sold pursuant to a Common Stock Purchase Agreement which contains a five-and-one-half-year standstill period, subject to certain exceptions, during which Lavazza is prohibited from increasing its ownership of Common Stock or making any proposals or announcements relating to extraordinary Company transactions. The standstill is subject to additional exceptions after a one-year period, including Lavazza's right to purchase additional shares up to 15% of the Company's outstanding shares.

Stock Repurchase Program

On July 30, 2012, the Board of Directors authorized a program for the Company to repurchase up to $500.0 million of the Company's common shares over the next two years, at such times and prices as determined by the Company's management. Consistent with Delaware law, any repurchased shares are constructively retired and returned to an unissued status. Accordingly, the par value of repurchased shares is deducted from common stock and excess repurchase price over the par value is deducted from additional paid-in capital and from retained earnings if additional paid-in capital is depleted. As of September 28, 2013, $235.3 million remained available for shares to be repurchased under current authorization by our Board of Directors.

	Fiscal 2013	Fiscal 2012
Number of shares acquired	5,642,793	3,120,700
Average price per share of acquired shares	$ 33.37	$ 24.50
Total cost of acquired shares (in thousands)	$ 188,278	$ 76,470

Subsequent to the fiscal year ended September 28, 2013, the Company repurchased an additional 1,348,883 of common shares, leaving $137.8 million available for shares to be repurchased under current authorization by the Company's Board of Directors.

Accumulated Other Comprehensive Income (Loss)

The following table provides the changes in the components of accumulated other comprehensive income (loss), net of tax (in thousands):

	Cash Flow Hedges	Translation	Accumulated Other Comprehensive Income (Loss)
Balance at September 25, 2010	$ (1,630)	$ —	$ (1,630)
Other comprehensive loss during the period	(4,236)	(8,709)	(12,945)
Balance at September 24, 2011	(5,866)	(8,709)	(14,575)
Other comprehensive income during the period	74	24,701	24,775
Balance at September 29, 2012	(5,792)	15,992	10,200
Other comprehensive loss during the period	(1,358)	(28,027)	(29,385)
Balance at September 28, 2013	$ (7,150)	$ (12,035)	$ (19,185)

The unfavorable translation adjustment change during fiscal year 2013 and 2011 was primarily due to the weakening of the Canadian dollar against the U.S. dollar. The favorable translation adjustment change during fiscal year 2012 was primarily due to the strengthening of the Canadian against the U.S. dollar. See also Note 11, *Derivative Financial Instruments*.

15. Employee Compensation Plans

Equity-Based Incentive Plans

On March 16, 2006, stockholders of the Company approved the Company's 2006 Incentive Plan (the "2006 Plan"). The 2006 Plan was amended on March 13, 2008 and on March 11, 2010 to increase the total shares of common stock authorized for issuance to 13,200,000. As of September 28, 2013, 4,537,397 shares of common stock were available for grant for future equity-based compensation awards under the plan.

On September 25, 2001, the Company registered on Form S-8 the 2000 Stock Option Plan (the "2000 Plan"). The plan expired in October 2010. Grants under the 2000 Plan generally expire ten years after the grant date, or earlier if employment terminates. As of September 28, 2013, there were no options for shares of common stock available for grant under this plan.

In connection with the acquisition of Keurig, the Company assumed the existing outstanding unvested option awards of the Keurig, Incorporated Fifth Amended and Restated 1995 Stock Option Plan (the "1995 Plan") and the Keurig, Incorporated 2005 Stock Option Plan (the "2005 Plan"). No shares under either the 1995 Plan or the 2005 Plan were eligible for post-acquisition awards. As of September 28, 2013 and September 29, 2012, 0 and 2,776 options, respectively, out of the 1,386,933 options for shares of common stock granted were outstanding under the 1995 Plan. As of September 28, 2013 and September 29, 2012, 28,749 options and 37,313 options, respectively, out of the 1,490,577 options granted for shares of common stock were outstanding under the 2005 Plan. All awards assumed in the acquisition were initially granted with a four-year vesting schedule.

On May 3, 2007, Mr. Lawrence Blanford commenced his employment as the President and Chief Executive Officer of the Company. Pursuant to the terms of the employment, the Company made an inducement grant on May 4, 2007, to Mr. Blanford of a non-qualified option to purchase 945,000 shares of the Company's common stock, with an exercise price equal to fair market value on the date of the grant. The shares subject to the option vested in 20% installments on each of the first five anniversaries of the date of the grant.

On November 3, 2008, Ms. Michelle Stacy commenced her employment as the President of Keurig, Incorporated. Pursuant to the terms of the employment, the Company made an inducement grant on November 3, 2008, to Ms. Stacy of a non-qualified option to purchase 157,500 shares of the Company's common stock, with an exercise price equal to fair market value on the date of the grant. The shares subject to the option vested in 25% installments on each of the first four anniversaries of the date of the grant.

On February 9, 2009, Mr. Howard Malovany commenced his employment as the Vice President, Corporate General Counsel and Secretary of the Company. Pursuant to the terms of the employment, the Company made an inducement grant on February 9, 2009, to Mr. Malovany of a non-qualified option to purchase 157,500 shares of the Company's common stock, with an exercise price equal to fair market value on the date of the grant. The shares subject to the option vested in 25% installments on each of the first four anniversaries of the date of the grant.

On December 17, 2010, Mr. Gérard Geoffrion commenced his employment as the President of the Canada segment. Pursuant to the terms of the employment, the Company made an inducement grant on December 17, 2010, to Mr. Geoffrion of a non-qualified option to purchase 35,000 shares of the Company's common stock, with an exercise price equal to fair market value on the date of the grant. The shares subject to the option vest in 25% installments on each of the first four anniversaries of the date of the grant, provided that Mr. Geoffrion remains employed with the Company on each vesting date.

On December 22, 2010, the Company made an inducement grant to Mr. Sylvain Toutant, Chief Operating Officer of the Canada segment, of a non-qualified option to purchase 20,000 shares of the Company's common stock, with an exercise price equal to fair market value on the date of the grant. The shares subject to the option vest in 25% installments on each of the first four anniversaries of the date of the grant, provided that Mr. Toutant remains employed with the Company on each vesting date.

On February 17, 2011, Ms. Linda Longo-Kazanova commenced her employment as the Vice President, Chief Human Resources Officer. Pursuant to the terms of the employment, the Company made an inducement grant on February 17, 2011, to Ms. Longo-Kazanova of a non-qualified option to purchase 30,000 shares of the Company's common stock, with an exercise price equal to fair market value on the date of the grant. The shares subject to the option vest in 25% installments on each of the first four anniversaries of the date of the grant, provided that Ms. Longo-Kazanova remains employed with the Company on each vesting date.

Under the 2000 Plan, the option price for each incentive stock option was not less than the fair market value per share of common stock on the date of grant, with certain provisions which increased the option price of an incentive stock option to 110% of the fair market value of the common stock if the grantee owned in excess of 10% of the Company's common stock at the date of grant. The 2006 Plan requires the exercise price for all awards requiring exercise to be no less than 100% of fair market value per share of common stock on the date of grant, with certain provisions which increase the option price of an incentive stock option to 110% of the fair market value of the common stock if the grantee owns in excess of 10% of the Company's common stock at the date of grant. Options under the 2000 Plan and the 2006 Plan become exercisable over periods determined by the Board of Directors, generally in the range of three to five years.

Option activity is summarized as follows:

	Number of Shares	Weighted Average Exercise Price (per share)
Outstanding at September 29, 2012	7,470,975	$ 12.56
Granted	474,236	$ 45.48
Exercised	(2,849,308)	$ 6.95
Forfeited/expired	(73,563)	$ 49.53
Outstanding at September 28, 2013	5,022,340	$ 18.30
Exercisable at September 28, 2013	3,958,017	$ 10.70

The following table summarizes information about stock options that have vested and are expected to vest at September 28, 2013:

Number of options outstanding	Weighted average remaining contractual life (in years)	Weighted average exercise price	Intrinsic value at September 28, 2013 (in thousands)
5,011,076	4.81	$ 18.24	$ 284,095

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table summarizes information about stock options exercisable at September 28, 2013:

Number of options exercisable	**Weighted average remaining contractual life (in years)**	**Weighted average exercise price**	**Intrinsic value at September 28, 2013 (in thousands)**
3,958,017	3.90	$ 10.70	$ 254,162

Compensation expense is recognized only for those options expected to vest, with forfeitures estimated based on the Company's historical employee turnover experience and future expectations.

The Company uses a blend of recent and historical volatility to estimate expected volatility at the measurement date. The expected life of options is estimated based on options vesting periods, contractual lives and an analysis of the Company's historical experience.

The intrinsic values of options exercised during fiscal years 2013, 2012 and 2011 were approximately $165.5 million, $46.6 million and $221.8 million, respectively. The Company's policy is to issue new shares upon exercise of stock options.

The grant-date fair value of employee share options and similar instruments is estimated using the Black-Scholes option-pricing model with the following assumptions for grants issued during fiscal years 2013, 2012 and 2011:

	Fiscal 2013	**Fiscal 2012**	**Fiscal 2011**
Average expected life	6 years	6 years	6 years
Average volatility	81%	69%	52%
Dividend yield	—	—	—
Risk-free interest rate	1.02%	1.31%	2.37%
Weighted average fair value	$ 31.23	$ 30.10	$ 29.34

Restricted Stock Units and Other Awards

The Company awards restricted stock units ("RSUs"), restricted stock awards ("RSAs"), and performance stock units ("PSUs") to eligible employees ("Grantee") which entitle the Grantee to receive shares of the Company's common stock. RSUs and PSUs are awards denominated in units that are settled in shares of the Company's common stock upon vesting. RSAs are awards of common stock that are restricted until the shares vest. In general, RSUs and RSAs vest based on a Grantee's continuing employment. The fair value of RSUs, RSAs and PSUs is based on the closing price of the Company's common stock on the grant date. Compensation expense for RSUs and RSAs is recognized ratably over a Grantee's service period. Compensation expense for PSUs is also recognized over a Grantee's service period, but only if and when the Company concludes that it is probable (more than likely) the performance condition(s) will be achieved. The assessment of probability of achievement is performed each period based on the relevant facts and circumstances at that time, and if the estimated grant-date fair value changes as a result of that assessment, the cumulative effect of the change on current and prior periods is recognized in the period of change. In addition, the Company awards deferred cash awards ("DCAs"), to Grantees which entitle a Grantee to receive cash paid over time upon vesting. The vesting of DCAs is conditioned on a Grantee's continuing employment. All awards are reserved for issuance under the Company's 2006 Incentive Plan and vest over periods determined by the Board of Directors, generally in the range of three to four years for RSUs, RSAs and DCAs, and three years for PSUs.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table summarizes the number and weighted average grant-date fair value of nonvested RSUs (amounts in thousands except grant date fair value and weighted average remaining contractual life):

	Share Units	Weighted Average Grant-Date Fair Value	Weighted Average Remaining Contractual Life (in Years)	Intrinsic Value (in Thousands)
Nonvested, September 29, 2012	81,834	$ 39.62	3.52	$ 1,943
Granted	175,789	$ 45.19		
Vested	(34,761)	$ 47.22		
Forfeited	(1,360)	$ 54.12		
Nonvested, September 28, 2013	221,502	$ 42.74	1.71	$ 16,586

As of September 28, 2013, total RSUs expected to vest totaled 218,459 shares with an intrinsic value of $16.4 million. The weighted average grant-date fair value of RSUs granted was $45.19 and $39.73 for fiscal 2013 and fiscal 2012, respectively. There were no RSUs granted prior to fiscal 2012.

The total intrinsic value of RSUs converted to shares of common stock during fiscal 2013 was $2.2 million. There were no RSUs converted to common stock prior to fiscal 2013.

The following table summarizes the number and weighted average grant-date fair value of nonvested PSUs based on the target award amounts in the PSU agreements as of September 28, 2013:

	Share Units	Weighted Average Grant-Date Fair Value
Outstanding on September 29, 2012	—	—
Granted	122,719	$ 41.28
Forfeited	(2,051)	$ 51.56
Outstanding on September 28, 2013(1)	120,668	$ 41.10

(1) The outstanding PSUs as of September 28, 2013, at the threshold award and maximum award levels were 96,534 and 144,802, respectively.

The weighted average grant-date fair value of PSUs granted was $41.28 in fiscal 2013. The Company did not issue grants for PSUs prior to fiscal 2013. There were no PSUs converted to shares of common stock during fiscal 2013.

In addition, in fiscal 2012, the Company issued a grant for 55,432 RSAs with an intrinsic value of $1.3 million as of September 29, 2012, which vested in fiscal 2013. The total intrinsic value of RSAs vested during fiscal 2013 was $2.7 million.

Employee Stock Purchase Plan

On October 5, 1998, the Company registered on Form S-8 the 1998 Employee Stock Purchase Plan. On March 13, 2008, the plan was amended and renamed the Amended and Restated Employee Stock Purchase Plan ("ESPP"). Under this plan, eligible employees may purchase shares of the Company's common stock, subject to certain limitations, at the lesser of 85 percent of the beginning or ending withholding period fair market value as defined in the plan. There are two six-month withholding periods in each fiscal year. At September 28, 2013, and September 29, 2012, options for 1,216,051 and 1,559,728 shares of common stock were available for purchase under the plan, respectively.

The grant-date fair value of employees' purchase rights granted during fiscal years 2013, 2012 and 2011 under the Company's ESPP is estimated using the Black-Scholes option-pricing model with the following assumptions:

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Average expected life	6 months	6 months	6 months
Average volatility	86%	70%	57%
Dividend yield	—	—	—
Risk-free interest rate	0.13%	0.09%	0.19%
Weighted average fair value	$ 14.38	$ 11.61	$ 15.97

Stock-Based Compensation Expense

Stock-based compensation expense recognized in the Consolidated Statements of Operations in fiscal years 2013, 2012, and 2011 (in thousands):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Options	$ 14,151	$ 12,595	$ 8,206
RSUs/PSUs/RSAs	7,529	1,861	—
ESPP	4,401	3,412	2,155
Total stock-based compensation expense recognized in the Consolidated Statements of Operations	$ 26,081	$ 17,868	$ 10,361
Total related tax benefit	$ 9,936	$ 6,004	$ 3,147

As of September 28, 2013, total unrecognized compensation cost related to all nonvested stock-based compensation arrangements was approximately $30.5 million net of estimated forfeitures. This unrecognized cost is expected to be recognized over a weighted-average period of approximately 1.28 years at September 28, 2013.

16. Employee Retirement Plans

Defined Contribution Plans

The Company has a defined contribution plan which meets the requirements of section 401(k) of the Internal Revenue Code. All regular full-time U.S. employees of the Company who are at least eighteen years of age and work a minimum of 36 hours per week are eligible to participate in the plan. The plan allows employees to defer a portion of their salary on a pre-tax basis and the Company contributes 50% of amounts contributed by employees up to 6% of their salary. Company contributions to the plan were $5.2 million, $4.4 million, and $2.7 million, for fiscal years 2013, 2012, and 2011, respectively.

In conjunction with the Van Houtte acquisition, the Company also has several Canadian Group Registered Retirement Savings Plans ("GRRSP") and a Deferred Profit Sharing Plan ("DPSP"). Under these plans, employees can contribute a certain percentage of their salary and the Company can also make annual contributions to the plans. Company contributions to the Canadian plans were $1.4 million, $1.0 million and $0.8 million for fiscal years 2013, 2012, and 2011, respectively.

Defined Benefit Plans

The Company has a supplementary defined benefit retirement plan and a supplementary employee retirement plan (collectively the "Plans") for certain management employees in the Canada segment. The cost of the Plans is calculated according to actuarial methods that encompass management's best estimate regarding the future evolution of salary levels, the age of retirement of salaried employees and other actuarial factors. These Plans are not funded and there are no plan assets. Future benefits will be paid from the funds of the Company.

The projected benefit obligation was $1.4 million and $1.1 million as of September 28, 2013 and September 29, 2012, which is classified in *other long-term liabilities*. Net periodic pension expense (income) was $0.3 million, $(0.1) million and $0.5 million for fiscal years 2013, 2012, and 2011, respectively.

17. Deferred Compensation Plan

The 2002 Deferred Compensation Plan, amended in December 2007, permits certain highly compensated officers and employees of the Company and non-employee directors to defer eligible compensation payable for services rendered to the Company. On March 8, 2013, the Company registered on Form S-8 the 2002 Deferred Compensation Plan. Participants may elect to receive deferred compensation in the form of cash payments or shares of Company Common Stock on the date or dates selected by the participant or on such other date or dates specified in the Deferred Compensation Plan. The Deferred Compensation Plan is in effect for compensation earned on or after September 29, 2002. As of September 28, 2013, and September 29, 2012, 353,434 shares and 357,759 shares of Common Stock were available for future issuance under this Plan, respectively. During fiscal 2013, no rights to shares of Common Stock were exercised under this plan. As of September 28, 2013 and September 29, 2012, rights to acquire 59,561 shares and 55,236 shares of Common Stock were outstanding under this Plan, respectively. As of September 28, 2013, rights to acquire 37,005 shares of Common Stock were committed under this plan. As of September 29, 2012, there were no rights to acquire shares of Common Stock committed under this plan.

18. Accrued Expenses

Accrued expenses consisted of the following (in thousands) as of:

	September 28, 2013	September 29, 2012
Accrued compensation costs	$ 91,418	$ 38,458
Accrued customer incentives and promotions	53,689	28,374
Accrued freight, fulfillment and transportation costs	21,941	18,455
Accrued sustainability expenses	9,275	11,046
Accrued legal and professional services	8,278	5,010
Warranty reserve	7,804	20,218
Other	50,022	49,889
	$ 242,427	$ 171,450

19. Commitments and Contingencies

Lease Commitments

The Company leases office and retail space, production, distribution and service facilities, and certain equipment under various non-cancellable operating leases, with terms ranging from one to twenty years. Property leases normally require payment of a minimum annual rental plus a pro-rata share of certain landlord operating expenses. Total rent expense, under all operating leases approximated $23.1 million, $25.1 million, and $18.1 million in fiscal years 2013, 2012, and 2011, respectively. The Company has subleases relating to certain of its operating leases. Sublease income approximated $1.1 million, $0.3 million and $0.3 million for fiscal years 2013, 2012 and 2010, respectively.

In addition, the Company leases a manufacturing facility which is accounted for as a capital lease. The initial term of the lease is 15 years with six additional renewal terms of five years each at the Company's option. The lease requires payment of a minimum annual rental and the Company is responsible for property taxes, insurance and operating expenses.

In June 2012, the Company entered into an arrangement to lease approximately 425,000 square feet located in Burlington, Massachusetts to be constructed. The Burlington facilities will be used by the Domestic segment and will consolidate the three existing Massachusetts facilities that are currently in Reading, Wakefield and Woburn. As of September 28, 2013, approximately 150,000 square feet had been completed and is being used for research and development. The remaining 275,000 square feet is currently under construction and is anticipated to be completed during the summer of 2014.

Due to the Company's involvement in the construction project, including its obligations to fund certain costs of construction exceeding amounts incurred by the lessor, the Company is deemed to be the owner of the project, which includes a pre-existing structure on the site, even though the Company is not the legal owner. Accordingly, total project costs incurred during construction are capitalized as construction-in-progress along with a corresponding financing obligation for the project costs that are incurred by the lessor. In addition, the Company capitalized the estimated fair value of the pre-existing structure of $4.1 million at the date construction commenced as construction-in-progress with a corresponding financing obligation. Upon completion of the project, the Company is expecting to have continuing involvement beyond a normal leaseback, and therefore will not be able to record a sale and derecognize the assets when construction is complete. As a result, the lease will be accounted for as a financing transaction and the recorded asset and related financing obligation will remain on the Balance Sheet.

As of September 28, 2013, future minimum lease payments under financing obligations, capital lease obligations and non-cancellable operating leases as well as minimum payments to be received under non-cancellable subleases are as follows (in thousands):

Fiscal Year	Capital Leases	Operating Leases	Subleases	Financing Obligations
2014	$ 3,518	$ 16,602	$ (1,021)	$ 2,029
2015	3,838	15,534	(1,012)	8,661
2016	3,837	11,797	(848)	9,580
2017	3,837	8,631	(690)	9,580
2018	3,837	5,280	(634)	9,665
Thereafter	31,980	20,140	(2,156)	113,722
Total	$ 50,847	$ 77,984	$ (6,361)	$ 153,237
Less: amount representing interest	(17,075)			
Present value of future minimum lease payments	$ 33,772			

The above table for financing obligations represents the portion of the future minimum lease payments which have been allocated to the facility under construction in Burlington, Massachusetts and will be recognized as reductions to the financing obligation and as interest expense upon completion of construction.

Legal Proceedings

On October 1, 2010, Keurig, Incorporated, a wholly-owned subsidiary of the Company ("Keurig"), filed suit against Sturm Foods, Inc. ("Sturm") in the United States District Court for the District of Delaware (Civil Action No. 1:10-CV-00841-SLR) for patent and trademark infringement, false advertising, and other claims, related to Sturm's sale of "Grove Square" beverage cartridges that claim to be compatible with Keurig brewers. On September 13, 2012, the District Court rendered a summary judgment decision in favor of Sturm on the patent claims in the suit. On October 17, 2013, the United States Federal Circuit Court of Appeals upheld the District Court's summary judgment decision. Separately, on February 19, 2013, Keurig and Sturm entered into a settlement agreement with respect to the trademark infringement, false advertising, and other claims at issue in the suit, all of which have now been dismissed. The settlement agreement did not materially impact the Company's consolidated financial results of operations.

On November 2, 2011, Keurig filed suit against JBR, INC., d/b/a Rogers Family Company ("Rogers") in the United States District Court for the District of Massachusetts (Civil Action No. 1:11-cv-11941-MBB) for patent infringement related to Rogers' sale of "San Francisco Bay" beverage cartridges for use with Keurig brewers. The suit alleges that the "San Francisco Bay" cartridges infringe certain Keurig patents (U.S. Patent Nos. D502,362, 7,165,488 and 7,347,138). Keurig sought an injunction prohibiting Rogers from selling these cartridges, as well as money damages. In late 2012, Rogers moved for summary judgment of no infringement as to all three asserted patents. On May 24, 2013, the District of Massachusetts granted Rogers' summary judgment motions. Keurig has since appealed the Court's ruling to the Federal Circuit, and that appeal is currently pending.

On May 9, 2011, an organization named Council for Education and Research on Toxics ("CERT"), purporting to act in the public interest, filed suit in Los Angeles Superior Court (*Council for Education and Research on Toxics v. Brad Barry LLC, et al.*, Case No. BC461182.) against several companies, including the Company, that roast, package, or sell coffee in California. The *Brad Barry* complaint alleges that coffee contains the chemical acrylamide and that the Company and the other defendants are required to provide warnings under section 25249.6 of the California Safe Drinking Water and Toxics Enforcement Act, better known as Proposition 65. The Brad Barry action has been consolidated for all purposes with another Proposition 65 case filed by CERT on April 13, 2010 over allegations of acrylamide in "ready to drink" coffee sold in restaurants, convenience stores, and do-nut shops. (*Council for Education and Research on Toxics v. Starbucks Corp., et al.*, Case No. BC 415759). The Company was not named in the *Starbucks* complaint. The Company has joined a joint defense group ("JDG") organized to address CERT's allegations, and the

Company intends to vigorously defend against these allegations. The Court has ordered the case phased for discovery and trial. The first phase of the case, which has been set for trial on September 8, 2014, is limited to three affirmative defenses shared by all defendants in both cases, with other affirmative defenses, plaintiff's prima facie case, and remedies deferred for subsequent phases. Discovery on the first phase of the case is underway. Because this lawsuit is only in a preliminary stage, the Company is unable to predict its outcome, the potential loss or range of loss, if any, associated with its resolution or any potential effect it may have on the Company or its operations.

On January 24, 2012, Teashot, LLC ("Teashot") filed suit against the Company, Keurig and Starbucks Corp. ("Starbucks") in the United States District Court for the District of Colorado (Civil Action No. 12-c v-00189-WJM-KMT) for patent infringement related to the making, using, importing, selling and/or offering for sale of K-Cup packs containing tea. The suit alleges that the Company, Keurig and Starbucks infringe a Teashot patent (U.S. Patent No. 5,895,672). Teashot seeks an injunction prohibiting the Company, Keurig and Starbucks from continued infringement, as well as money damages. Pursuant to the Company's Manufacturing, Sales and Distribution Agreement with Starbucks, the Company is defending and indemnifying Starbucks in connection with the suit. On March 13, 2012, the Company and Keurig, for themselves and Starbucks, filed an answer with the court, generally denying all of Teashot's allegations. The Company and Keurig, for themselves and Starbucks, are vigorously defending this lawsuit. On May 24, 2013, the Company and Keurig, for themselves and Starbucks, filed a motion for summary judgment of non-infringement. On July 19, 2013, Teashot filed a motion for partial summary judgment on certain other, unrelated issues. No hearing on the summary judgment motions has been scheduled. At this time, the Company is unable to predict the outcome of this lawsuit, the potential loss or range of loss, if any, associated with the resolution of this lawsuit or any potential effect it may have on the Company or its operations.

Securities and Exchange Commission ("SEC") Inquiry

As first disclosed on September 28, 2010, the staff of the SEC's Division of Enforcement continues to conduct an inquiry into matters at the Company. The Company is cooperating fully with the SEC staff's inquiry.

Stockholder Litigation

Two putative securities fraud class actions are presently pending against the Company and certain of its officers and directors, along with two putative stockholder derivative actions. The first pending putative securities fraud class action was filed on November 29, 2011, and the third putative securities fraud class action was filed on May 7, 2012. A consolidated putative stockholder derivative action pending in the United States District Court for the District of Vermont consists of five separate putative stockholder derivative complaints, the first two were filed after the Company's disclosure of the SEC inquiry on September 28, 2010, while the others were filed on February 10, 2012, March 2, 2012, and July 23, 2012, respectively. In addition, a putative stockholder derivative action is pending in the Superior Court of the State of Vermont for Washington County that was commenced following the Company's disclosure of the SEC inquiry on September 28, 2010.

The first pending putative securities fraud class action, captioned Louisiana Municipal Police Employees' Retirement System ("LAMPERS") v. Green Mountain Coffee Roasters, Inc., et al., Civ. No. 2:11-cv-00289, is pending in the United States District Court for the District of Vermont before the Honorable William K. Sessions, III. Plaintiffs' amended complaint alleges violations of the federal securities laws in connection with the Company's disclosures relating to its revenues and its inventory accounting practices. The amended complaint seeks class certification, compensatory damages, attorneys' fees, costs, and such other relief as the court should deem just and proper. Plaintiffs seek to represent all purchasers of the Company's securities between February 2, 2011 and November 9, 2011. The initial complaint filed in the action on November 29, 2011 included counts for alleged violations of (1) Sections 11, 12(a)(2) and 15 of the Securities Act of 1933 (the "Securities Act") against the Company, certain of its officers and directors, and the Company's underwriters in connection with a May 2011 secondary common stock offering; and (2) Section 10(b) of the Exchange Act and Rule 10b-5 against the Company and the officer defendants, and for violation of Section 20(a) of the Exchange Act against the officer defendants. Pursuant to the Private Securities Litigation Reform Act of 1995, 15 U.S.C. § 78u-4(a)(3), plaintiffs had until January 30, 2012 to move the court to serve as lead plaintiff of the putative class. Competing applications were filed and the Court appointed Louisiana Municipal Police Employees' Retirement System, Sjunde AP-Fonden, Board of Trustees of the City of Fort Lauderdale General Employees' Retirements System, Employees' Retirements System of the Government of the Virgin Islands, and Public Employees' Retirement System of Mississippi as lead plaintiffs' counsel on April 27, 2012. Pursuant to a schedule approved by the court, plaintiffs filed their amended complaint on October 22, 2012, and plaintiffs filed a corrected amended complaint on November 5, 2012. Plaintiffs' amended complaint does not allege any claims under the Securities Act against the Company, its officers and directors, or the Company's underwriters in connection with the May 2011 secondary common stock offering. Defendants moved to dismiss the amended complaint on March 1, 2013 and the briefing of their motions was completed on June 26, 2013. An oral argument on the defendants' motions to dismiss was set for August 27, 2013 and has been rescheduled to December 12, 2013. The underwriters previously named as defendants notified the Company of their intent to seek indemnification from the Company pursuant to their underwriting agreement dated May 5, 2011 in regard to the claims asserted in this action.

The second pending consolidated putative securities fraud class action, captioned Fifield v. Green Mountain Coffee Roasters, Inc., Civ. No. 2:12-cv-00091, is also pending in the United States District Court for the District of Vermont before the Honorable William K. Sessions, III. Plaintiffs' amended complaint alleges violations of the federal securities laws in connection with the Company's disclosures relating to its forward guidance. The amended complaint includes counts for alleged violations of Section 10(b) of the Exchange Act and Rule 10b-5 against all defendants, and for alleged violation of Section 20(a) of the Exchange Act against the officer defendants. The amended complaint seeks class certification, compensatory damages, equitable and/or injunctive relief, attorneys' fees, costs, and such other relief as the court should deem just and proper. Plaintiffs seek to represent all purchasers of the Company's securities between February 2, 2012 and May 2, 2012. Pursuant to the Private Securities Litigation Reform Act of 1995, 15 U.S.C. § 78u-4(a)(3), plaintiffs had until July 6, 2012 to move the court to serve as lead plaintiff of the putative class. On July 31, 2012, the court appointed Kambiz Golesorkhi as lead plaintiff and approved his selection of Kahn Swick & Foti LLC as lead counsel. On August 14, 2012, the court granted the parties' stipulated motion for filing of an amended complaint and to set a briefing schedule for defendants' motions to dismiss. Pursuant to a schedule approved by the court, plaintiffs filed their amended complaint on October 23, 2012, adding William C. Daley as an additional lead plaintiff. Defendants moved to dismiss the amended complaint on January 17, 2013 and the briefing of their motions was completed on May 17, 2013. On September 26, 2013, the court issued an order granting defendants' motions and dismissing the amended complaint without prejudice and allowing plaintiffs a 30-day period within which to amend their complaint. On October 18, 2013, plaintiffs filed a notice of intent to appeal the court's September 26, 2013 order to the United States Court of Appeals for the Second Circuit. On November 1, 2013, following the expiration of the 30-day period to amend the complaint, defendants filed a motion for final judgment in District Court. Pursuant to an order issued by the Second Circuit, plaintiff-appellants' brief in the appeal of the District Court's decision is due no later than December 10, 2013 and defendant-appellees' brief is due no later than January 14, 2014.

The first putative stockholder derivative action, a consolidated action captioned In re Green Mountain Coffee Roasters, Inc. Derivative Litigation, Civ. No. 2:10-cv-00233, premised on the same allegations asserted in now-dismissed Horowitz v. Green Mountain Coffee Roasters, Inc., Civ. No. 2:10-cv-00227 securities class action complaint and the other pending putative securities class action complaints described above, is pending in the United States District Court for the District of Vermont before the Honorable William K. Sessions, III. On November 29, 2010, the federal court entered an order consolidating two actions and appointing the firms of Robbins Umeda LLP and Shuman Law Firm as co-lead plaintiffs' counsel. On February 23, 2011, the federal court approved a stipulation filed by the parties providing for a temporary stay of that action until the court rules on defendants' motions to dismiss the consolidated complaint in the Horowitz putative securities fraud class action. On March 7, 2012, the federal court approved a further joint stipulation continuing the temporary stay until the court either denies a motion to dismiss the Horowitz putative securities fraud class action or the Horowitz putative securities fraud class action is dismissed with prejudice. On April 27, 2012, the federal court entered an order consolidating the stockholder derivative action captioned Himmel v. Robert P. Stiller, et al., with two additional putative derivative actions, Musa Family Revocable Trust v. Robert P. Stiller, et al., Civ. No. 2:12-cv-00029, and Laborers Local 235 Benefit Funds v. Robert P. Stiller, et al., Civ. No. 2:12-cv- 00042. On November 14, 2012, the federal court entered an order consolidating an additional stockholder derivative action, captioned as Henry Cargo v. Robert P. Stiller, et al., Civ. No. 2:12-cv-00161, and granting plaintiffs leave to lift the stay for the limited purpose of filing a consolidated complaint. The consolidated complaint is asserted nominally on behalf of the Company against certain of its officers and directors. The consolidated complaint asserts claims for breach of fiduciary duty, waste of corporate assets, unjust enrichment, contribution, and indemnification and seeks compensatory damages, injunctive relief, restitution, disgorgement, attorney's fees, costs, and such other relief as the court should deem just and proper. On May 14, 2013, the court approved a joint stipulation filed by the parties providing for a temporary stay of the proceedings until the conclusion of the appeal in the Horowitz putative securities fraud class action. On August 1, 2013, the parties filed a further joint stipulation continuing the temporary stay until the court either denies a motion to dismiss the LAMPERS putative securities fraud class action or the LAMPERS putative securities fraud class action is dismissed with prejudice, which the court approved on August 2, 2013.

The second putative stockholder derivative action, M. Elizabeth Dickinson v. Robert P. Stiller, et al., Civ. No. 818-11-10, is pending in the Superior Court of the State of Vermont for Washington County. On February 28, 2011, the court approved a stipulation filed by the parties similarly providing for a temporary stay of that action until the federal court rules on defendants' motions to dismiss the consolidated complaint in the Horowitz putative securities fraud class action. As a result of the federal court's ruling in the Horowitz putative securities fraud class action, the temporary stay was lifted. On June 25, 2013, plaintiff filed an amended complaint in the action, which is asserted nominally on behalf of the Company against certain current and former directors and officers. The amended complaint is premised on the same allegations alleged in the Horowitz, LAMPERS, and Fifield putative securities fraud class actions. The amended complaint asserts claims for breach of fiduciary duty, unjust enrichment, waste of corporate assets, and alleged insider selling by certain of the named defendants. The amended complaint seeks compensatory damages, injunctive relief, restitution, disgorgement, attorneys' fees, costs, and such other relief as the court should deem just and proper. On August 7, 2013, the parties filed a further joint stipulation continuing the temporary stay until the court either denies a motion to dismiss the LAMPERS putative securities fraud class action or the LAMPERS putative securities fraud class action is dismissed with prejudice, which the court approved on August 21, 2013.

The Company and the other defendants intend to vigorously defend all the pending lawsuits. Additional lawsuits may be filed and, at this time, the Company is unable to predict the outcome of these lawsuits, the possible loss or range of loss, if any, associated with the resolution of these lawsuits or any potential effect they may have on the Company or its operations.

20. Related Party Transactions

The Company, from time to time, used travel services provided by Heritage Flight, a charter air services company acquired in September 2002 by Robert P. Stiller, who previously served on the Company's Board of Directors and who is a security holder of more than 5% of the Company's Common Stock. For fiscal years 2013, 2012, and 2011, the Company incurred expenses of $0.2 million, $0.7 million, and $0.7 million, respectively, for Heritage Flight travel services.

21. Earnings Per Share

The following table illustrates the reconciliation of the numerator and denominator of basic and diluted earnings per share computations (dollars in thousands, except share and per share data):

	Fiscal 2013	Fiscal 2012	Fiscal 2011
Numerator for basic and diluted earnings per share:			
Net income attributable to GMCR	$ 483,232	$ 362,628	$ 199,501
Denominator:			
Basic weighted average shares outstanding	149,638,636	154,933,948	146,214,860
Effect of dilutive securities—stock options	3,162,857	4,141,698	5,927,574
Diluted weighted average shares outstanding	152,801,493	159,075,646	152,142,434
Basic net income per common share	$ 3.23	$ 2.34	$ 1.36
Diluted net income per common share	$ 3.16	$ 2.28	$ 1.31

For the fiscal years 2013, 2012, and 2011, 822,000, 763,000, and 199,000 equity-based awards for shares of common stock, respectively, have been excluded in the calculation of diluted earnings per share because they were antidilutive.

GREEN MOUNTAIN COFFEE ROASTERS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

22. Unaudited Quarterly Financial Data

The following table presents the quarterly information for fiscal 2013 (dollars in thousands, except per share data). Each fiscal quarter comprises 13 weeks.

Fiscal 2013	December 29, 2012	March 30, 2013	June 29, 2013	September 28, 2013
Net sales	$ 1,339,059	$ 1,004,792	$ 967,072	$ 1,047,177
Gross profit	$ 419,163	$ 415,146	$ 407,618	$ 377,459
Net income attributable to GMCR	$ 107,583	$ 132,421	$ 116,272	$ 126,956
Earnings per share:				
Basic	$ 0.72	$ 0.89	$ 0.78	$ 0.84
Diluted	$ 0.70	$ 0.87	$ 0.76	$ 0.83

The following table presents the quarterly information for fiscal 2012 (dollars in thousands, except per share data). Each fiscal quarter comprises 13 weeks, except the fiscal quarter ended September 29, 2012 which is comprised of 14 weeks.

Fiscal 2012	December 24, 2011	March 24, 2012	June 23, 2012	September 29, 2012
Net sales	$ 1,158,216	$ 885,052	$ 869,194	$ 946,736
Gross profit	$ 336,604	$ 313,038	$ 303,311	$ 316,446
Net income attributable to GMCR	$ 104,414	$ 93,031	$ 73,296	$ 91,887
Earnings per share:				
Basic	$ 0.67	$ 0.60	$ 0.47	$ 0.59
Diluted	$ 0.66	$ 0.58	$ 0.46	$ 0.58

The following table presents the quarterly information for fiscal 2011 (dollars in thousands, except per share data). Each fiscal quarter comprises 13 weeks.

Fiscal 2011	December 25, 2010	March 26, 2011	June 25, 2011	September 24, 2011
Net sales	$ 574,148	$ 647,658	$ 717,210	$ 711,883
Gross profit	$ 143,600	$ 242,855	$ 264,080	$ 254,090
Net income attributable to GMCR	$ 2,412	$ 65,372	$ 56,348	$ 75,369
Earnings per share:				
Basic	$ 0.02	$ 0.46	$ 0.38	$ 0.49
Diluted	$ 0.02	$ 0.44	$ 0.37	$ 0.47

23. Subsequent Event

On November 19, 2013, the Board of Directors declared the Company's first cash dividend of $0.25 per common share, payable on February 14, 2014 to shareholders of record at the close of business on January 17, 2014; and announced an indicated annual dividend of $1.00 per share (payable in $0.25 per quarter).

SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS

For the Fiscal Years Ended September 28, 2013, September 29, 2012, and September 24, 2011 (Dollars in thousands)

Description	Balance at Beginning of Period	Acquisitions (Dispositions)	Charged to Costs and Expenses	Deductions	Balance at End of Period
Allowance for doubtful accounts:					
Fiscal 2013	$ 2,750	$ —	$ 689	$ 553	$ 2,886
Fiscal 2012	$ 3,404	$ (299)	$ 3,197	$ 3,552	$ 2,750
Fiscal 2011	$ 1,314	$ 1,115	$ 2,584	$ 1,609	$ 3,404

Description	Balance at Beginning of Period	Acquisitions (Dispositions)	Charged to Costs and Expenses	Deductions	Balance at End of Period
Sales returns reserve:					
Fiscal 2013	$ 31,767	$ —	$ 79,747	$ 80,760	$ 30,754
Fiscal 2012	$ 18,302	$ —	$ 107,436	$ 93,971	$ 31,767
Fiscal 2011	$ 12,742	$ —	$ 64,457	$ 58,897	$ 18,302

Description	Balance at Beginning of Period	Acquisitions (Dispositions)	Charged to Costs and Expenses	Deductions	Balance at End of Period
Warranty reserve(1):					
Fiscal 2013	$ 20,218	$ —	$ 6,948	$ 19,362	$ 7,804
Fiscal 2012	$ 14,728	$ —	$ 37,390	$ 31,900	$ 20,218
Fiscal 2011	$ 6,694	$ —	$ 35,450	$ 27,416	$ 14,728

(1) Includes warranty recoveries from suppliers of $0.8 million and $8.3 for fiscal 2013 and 2012, respectively. There were no recoveries during fiscal 2011.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

During the fourth quarter of fiscal 2013, under the supervision of and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities and Exchange Act of 1934, as amended (the "Exchange Act"). Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of September 28, 2013, our disclosure controls and procedures were effective to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act was recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and were effective.

For the Fiscal Years Ended September 28, 2013, September 29, 2012, and September 24, 2011—(Continued)

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Internal control over financial reporting is a process designed by, or under the supervision of, the issuer's principal executive and principal financial officers, or persons performing similar functions, and effected by issuer's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of its financial reporting and the preparation of its financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles,
- provide reasonable assurance that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision of and with the participation of management, including the Chief Executive Officer and Chief Financial Officer, the Company conducted an evaluation of the effectiveness of its internal control over financial reporting based on the criteria in *Internal Control—Integrated Framework* (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based upon that evaluation, management concluded we maintained effective internal controls over financial reporting as of September 28, 2013 based on the criteria established in *Internal Control— Integrated Framework* (1992) issued by the COSO.

The effectiveness of the Company's internal control over financial reporting as of September 28, 2013 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during the fiscal quarter ended September 28, 2013 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Appendix B

Present Value Tables

Table B-1 | **Present Value of $1**

	Present Value															
Periods	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**	**12%**	**14%**	**15%**	**16%**	**18%**	**20%**
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.893	0.877	0.870	0.862	0.847	0.833
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.797	0.769	0.756	0.743	0.718	0.694
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.712	0.675	0.658	0.641	0.609	0.579
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.636	0.592	0.572	0.552	0.516	0.482
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.567	0.519	0.497	0.476	0.437	0.402
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.507	0.456	0.432	0.410	0.370	0.335
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.452	0.400	0.376	0.354	0.314	0.279
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.404	0.351	0.327	0.305	0.266	0.233
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.361	0.308	0.284	0.263	0.225	0.194
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.322	0.270	0.247	0.227	0.191	0.162
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.287	0.237	0.215	0.195	0.162	0.135
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.257	0.208	0.187	0.168	0.137	0.112
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.229	0.182	0.163	0.145	0.116	0.093
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.205	0.160	0.141	0.125	0.099	0.078
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.183	0.140	0.123	0.108	0.084	0.065
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.163	0.123	0.107	0.093	0.071	0.054
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.146	0.108	0.093	0.080	0.060	0.045
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.130	0.095	0.081	0.069	0.051	0.038
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.116	0.083	0.070	0.060	0.043	0.031
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.104	0.073	0.061	0.051	0.037	0.026
21	0.811	0.660	0.538	0.439	0.359	0.294	0.242	0.199	0.164	0.135	0.093	0.064	0.053	0.044	0.031	0.022
22	0.803	0.647	0.522	0.422	0.342	0.278	0.226	0.184	0.150	0.123	0.083	0.056	0.046	0.038	0.026	0.018
23	0.795	0.634	0.507	0.406	0.326	0.262	0.211	0.170	0.138	0.112	0.074	0.049	0.040	0.033	0.022	0.015
24	0.788	0.622	0.492	0.390	0.310	0.247	0.197	0.158	0.126	0.102	0.066	0.043	0.035	0.028	0.019	0.013
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.059	0.038	0.030	0.024	0.016	0.010
26	0.772	0.598	0.464	0.361	0.281	0.220	0.172	0.135	0.106	0.084	0.053	0.033	0.026	0.021	0.014	0.009
27	0.764	0.586	0.450	0.347	0.268	0.207	0.161	0.125	0.098	0.076	0.047	0.029	0.023	0.018	0.011	0.007
28	0.757	0.574	0.437	0.333	0.255	0.196	0.150	0.116	0.090	0.069	0.042	0.026	0.020	0.016	0.010	0.006
29	0.749	0.563	0.424	0.321	0.243	0.185	0.141	0.107	0.082	0.063	0.037	0.022	0.017	0.014	0.008	0.005
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.033	0.020	0.015	0.012	0.007	0.004
40	0.672	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.032	0.022	0.011	0.005	0.004	0.003	0.001	0.001
50	0.608	0.372	0.228	0.141	0.087	0.054	0.034	0.021	0.013	0.009	0.003	0.001	0.001	0.001		

Table B-2 Present Value of Ordinary Annuity of $1

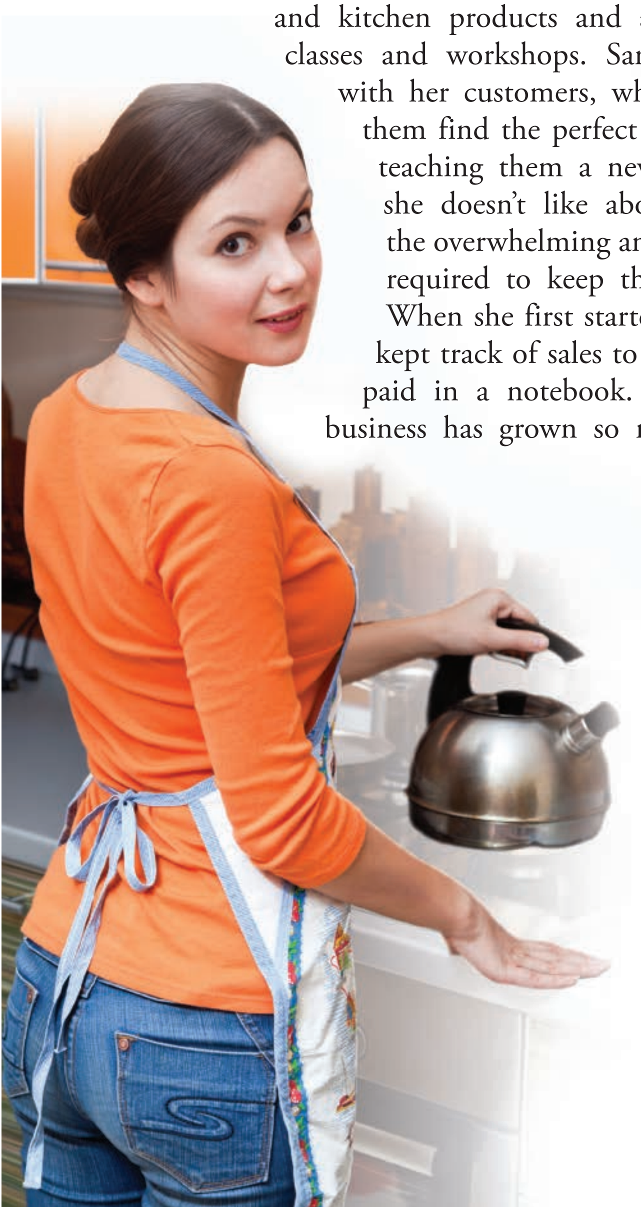
	Present Value															
Periods	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**	**12%**	**14%**	**15%**	**16%**	**18%**	**20%**
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.893	0.877	0.870	0.862	0.847	0.833
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.690	1.647	1.626	1.605	1.566	1.528
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.402	2.322	2.283	2.246	2.174	2.106
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.037	2.914	2.855	2.798	2.690	2.589
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.605	3.433	3.352	3.274	3.127	2.991
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	4.111	3.889	3.784	3.685	3.498	3.326
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.564	4.288	4.160	4.039	3.812	3.605
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	4.968	4.639	4.487	4.344	4.078	3.837
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.328	4.946	4.772	4.607	4.303	4.031
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.650	5.216	5.019	4.833	4.494	4.192
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495	5.938	5.453	5.234	5.029	4.656	4.327
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814	6.194	5.660	5.421	5.197	4.793	4.439
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103	6.424	5.842	5.583	5.342	4.910	4.533
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367	6.628	6.002	5.724	5.468	5.008	4.611
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606	6.811	6.142	5.847	5.575	5.092	4.675
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824	6.974	6.265	5.954	5.668	5.162	4.730
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022	7.120	6.373	6.047	5.749	5.222	4.775
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201	7.250	6.467	6.128	5.818	5.273	4.812
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.366	6.550	6.198	5.877	5.316	4.843
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514	7.469	6.623	6.259	5.929	5.353	4.870
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.292	8.649	7.562	6.687	6.312	5.973	5.384	4.891
22	19.660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9.442	8.772	7.645	6.743	6.359	6.011	5.410	4.909
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.580	8.883	7.718	6.792	6.399	6.044	5.432	4.925
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.707	8.985	7.784	6.835	6.434	6.073	5.451	4.937
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077	7.843	6.873	6.464	6.097	5.467	4.948
26	22.795	20.121	17.877	15.983	14.375	13.003	11.826	10.810	9.929	9.161	7.896	6.906	6.491	6.118	5.480	4.956
27	23.560	20.707	18.327	16.330	14.643	13.211	11.987	10.935	10.027	9.237	7.943	6.935	6.514	6.136	5.492	4.964
28	24.316	21.281	18.764	16.663	14.898	13.406	12.137	11.051	10.116	9.307	7.984	6.961	6.534	6.152	5.502	4.970
29	25.066	21.844	19.188	16.984	15.141	13.591	12.278	11.158	10.198	9.370	8.022	6.983	6.551	6.166	5.510	4.975
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427	8.055	7.003	6.566	6.177	5.517	4.979
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779	8.244	7.105	6.642	6.233	5.548	4.997
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.915	8.304	7.133	6.661	6.246	5.554	4.999

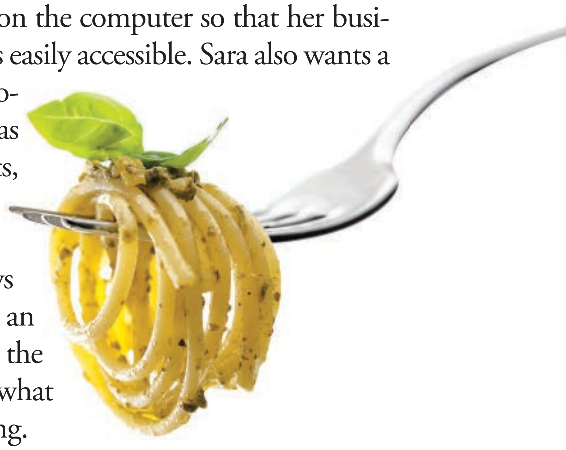
Appendix C
Accounting Information Systems

What Should I Do with All This Paperwork?

Sara Faraday stared at the stack of papers on her desk. It was early January, and her accountant had called to remind her that she needed to submit the business's accounting information so that the tax return could be prepared. Sara is a stockholder and manager of a successful gourmet kitchen store that sells specialty food and kitchen products and also offers cooking classes and workshops. Sara loves interacting with her customers, whether she's helping them find the perfect kitchen product or teaching them a new technique. What she doesn't like about her business is the overwhelming amount of paperwork required to keep the business records. When she first started her business, she kept track of sales to customers and bills paid in a notebook. Now, though, her business has grown so much that it is no longer efficient to keep track of her accounting records in this manner.

Sara is considering asking her accountant to help her set up a more efficient accounting information system. She wants a system that will save her time and make the recordkeeping process easier. In addition, she would like to find a way to record all of her transactions on the computer so that her business's information is easily accessible. Sara also wants a system that will produce reports, such as financial statements, that can help her make business decisions. She knows that there has to be an easier way to record the transactions than what she is currently doing.





Is There a More Efficient Way?

Before the advent of computers, businesses had to handle all of their accounting transactions manually—that is, one journal entry at a time using paper and pencil. As computer technology progressed, more and more accounting information was processed using an automated system. Now, most businesses use some form of computerized accounting software. It might be a very basic system that handles only accounting information, or it might be a very advanced system that stores not only accounting information, but also information about human resources, production, and customer services. For example, Dave's Gourmet, Inc. started with a desire to create the world's hottest hot sauce, but as the business grew into the multinational company that it is today, the business had to find a way to keep track of all of the business's accounting information. Dave's Gourmet uses a specialized computerized system that integrates all of its lines of business. In this appendix, we explore how accounting information systems, such as the one that Dave's Gourmet uses, can help a business run more efficiently and effectively.

Appendix C Learning Objectives

1 Describe an effective accounting information system

2 Journalize and post sales and cash receipts in a manual accounting information system using special journals and subsidiary ledgers

3 Journalize and post purchases, cash payments, and other transactions in a manual accounting information system using special journals and subsidiary ledgers

4 Describe how transactions are recorded in a computerized accounting information system

WHAT IS AN ACCOUNTING INFORMATION SYSTEM?

Learning Objective 1
Describe an effective accounting information system

An **accounting information system (AIS)** collects, records, stores, and processes accounting data to produce information that is useful for decision makers. Businesses must have a way to collect and store data for a large number of transactions and then use those data to produce reports that investors and management can use to make decisions. Exhibit C-1 shows examples of business transactions and activities that are completed when using an accounting information system.

Accounting Information System (AIS)
A system that collects, records, stores, and processes accounting data to produce information that is useful for decision makers.

Exhibit C-1 | **Business Transactions and AIS Activities**

Business Transactions	AIS Activities
Sell merchandise inventory	Receipt of customer order Approval of credit sale Check availability of merchandise inventory Shipment of inventory to customer Processing of sales invoice Receipt of customer payment
Purchase of goods or services	Request for purchase of goods or services Approval of vendor Receipt of goods or services Processing of vendor invoice Payment for goods or services
Payroll	Approval of new employees Collection of time records Preparation and payment of payroll Preparation and payment of payroll taxes

Effective Accounting Information Systems

An effective accounting information system provides the following:

- Control
- Compatibility
- Flexibility
- Relevance
- Positive cost/benefit relationship

Control

An accounting information system must provide adequate controls of the business's assets and data. Internal controls can safeguard a business's assets and reduce the likelihood of fraud and errors. For example, a business needs procedures for making cash payments. An accounting information system creates the structure to encourage adherence to management procedures.

Compatibility

A compatible system works smoothly with the business's employees and organizational structure. A small business doesn't need a big accounting information system. It could probably do accounting with an entry-level software package such as QuickBooks or Sage 50™ Accounting (formerly called Peachtree). But a large company needs a different system—one that can manage multiple branches and track revenues and expenses in all divisions of the business.

Flexibility

An accounting information system must be flexible to accommodate changes in a business over time. Businesses might start selling some new products, or they might expand to new locations. This will require a more complicated accounting information system.

Relevance

An effective accounting information system provides information that is relevant. In other words, it improves decision making and reduces uncertainty. The information produced must be useful to the business in achieving its overall goals.

Positive Cost/Benefit Relationship

Control, compatibility, flexibility, and relevance can be expensive. A business needs a system that gives the most benefit for the least cost. A relatively inexpensive system, such as QuickBooks, may be the most economical way for a business to do its accounting. Or it may be necessary for a business to invest a large amount of cash in a more complicated system. In addition, the business must consider the cost of training employees to use the system and time spent on entering data into the system. The business must invest only in an accounting information system in which the benefits received outweigh the cost of the system.

An accounting information system can be either manual (completed using paper and pencil) or computerized. All the previously discussed features are needed whether the accounting information system is computerized or manual.

Components of an Accounting Information System

An accounting information system has three basic components:

- Source documents and input devices
- Processing and storage
- Outputs

Source Documents and Input Devices

All data must come from **source documents**, which provide the evidence for accounting transactions. Examples of source documents include purchase invoices, bank checks, and sales invoices. Many businesses have paper source documents that require employees to transfer data from the paper source document into the accounting information system. This can be done either by data entry procedures using a keyboard and computer or by using computerized scanning equipment.

Source Document
Provides the evidence and data for accounting transactions.

Most businesses now are using computerized accounting information systems to create electronic source documents and capture the data in electronic format. Examples include an electronic invoice and an electronic receiving report.

Source documents also provide control and reliability in an accounting information system. Standardized source documents that require specific data to be input ensure that each transaction is recorded accurately and completely. In addition, prenumbered source documents provide necessary control in a system by automatically assigning a sequential number to each new transaction.

Processing and Storage

Once data has been input into the system, it must be processed. In a manual accounting information system, processing includes journalizing transactions and posting to the accounts. A computerized system, on the other hand, uses software to process transactions. This software reads and edits transaction data. It allows businesses to process transactions without actually requiring employees to journalize and post to the accounts.

A business's data must also be stored. In a manual system, data are contained in paper documents that are often stored in filing cabinets and off-site document warehouses. Computerized systems now allow businesses to keep data on a main computer, called a **server**, that often allows employees to access information from anywhere in the world. The protection and security of a business's data have become increasingly important. Businesses must be aware of threats to their data such as hacking (unauthorized access) and malware (viruses and spyware). Companies are spending increasingly large amounts of cash to ensure that their data and information are secure.

Server
The main computer where data are stored, which can be accessed from many different computers.

Outputs

Outputs are the reports used for decision making, including the financial statements. In a manual system, reports and financial statements must be created using Word documents, Excel spreadsheets, PowerPoint presentations, or other software applications. In a computerized system, the accounting software can generate reports instantaneously that can be easily manipulated and used to make business decisions.

DECISIONS

How safe are customer data?

Ian Woods had recently been hired as the chief information officer for a start-up Internet-based retail store—ShopUs.com. His main job duties included responsibility for the information technology and computer systems of the business. Ian was reviewing the security of customer data and realized that customer service representatives had access to all customer data including credit card information and billing addresses. What should Ian do?

Solution

The breach of customer data is a key threat to a business. Not only does a business have to be concerned about employees accessing customer data, but there is also a risk that unauthorized individuals outside of the business might hack into the system to obtain customer information. Ian should evaluate whether customer service representatives should have access to all customer data. It might be possible to encrypt some of the data and allow only managers to have access. In addition, Ian should set up guidelines and procedures for how data should be stored and protected. He should also review the federal and state regulations regarding the security of credit card and personal information to ensure that ShopUs.com is in compliance. Network surveillance, encryption, and software security procedures will all reduce the risk of data breach and abuse.

Try It!

Match the benefit of an effective accounting information system with the definition.

Benefit	Definition
1. Control	**a.** Works smoothly with the business's employees and organization structure
2. Relevance	**b.** Can accommodate changes in the business over time
3. Flexibility	**c.** Provides safeguards for a business's assets and reduces the likelihood of fraud and errors
4. Compatibility	**d.** Benefits received outweigh the cost of the system
5. Positive cost/benefit relationship	**e.** Provides information that will improve decision making and reduce uncertainty

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises SC-1 and SC-2. MyAccountingLab

HOW ARE SALES AND CASH RECEIPTS RECORDED IN A MANUAL ACCOUNTING INFORMATION SYSTEM?

Learning Objective 2
Journalize and post sales and cash receipts in a manual accounting information system using special journals and subsidiary ledgers

We will begin by reviewing how transactions are recorded in a manual accounting information system. You may be wondering why we cover manual accounting information systems when many businesses have computerized systems. There are three main reasons:

1. Learning a manual system equips you to work with both manual and computerized systems. The accounting is the same regardless of the system.
2. Few small businesses have computerized all their accounting. Even companies that use QuickBooks or Sage 50 Accounting, two popular entry-level accounting information systems, keep some manual accounting records.
3. Learning a manual system helps you master accounting.

Special Journals

In a manual system, transactions are classified by type. It is inefficient to record all transactions in the general journal, so businesses use special journals. A **special journal** is an accounting journal designed to record a specific type of transaction. Sales on account, cash receipts, purchases on account, and cash payments are treated as four separate categories and, therefore, create the four special journals. For example:

- Sales on account are recorded in a *sales journal.*
- Cash receipts are recorded in a *cash receipts journal.*
- Purchases of inventory and other assets on account are recorded in a *purchases journal.*
- Cash payments are recorded in a *cash payments journal.*
- Transactions that do not fit in any of the special journals, such as adjusting entries, are recorded in the *general journal,* which serves as the "journal of last resort."

Special Journal
An accounting journal designed to record one specific type of transaction.

The five types of transactions, the related journal, and the posting abbreviations used in a manual system are summarized in Exhibit C-2.

Exhibit C-2 | **Manual Accounting Information System**

Transaction	Journal	Posting Abbreviation
Sale on account	Sales journal	S
Cash receipt	Cash receipts journal	CR
Purchase on account	Purchases journal	P
Cash payment	Cash payments journal	CP
All others	General journal	J

Subsidiary Ledgers

In addition to special journals, an accounting information system also uses subsidiary ledgers. A **subsidiary ledger** holds individual accounts that support a general ledger account. There are two common subsidiary ledgers: accounts receivable subsidiary ledger and accounts payable subsidiary ledger.

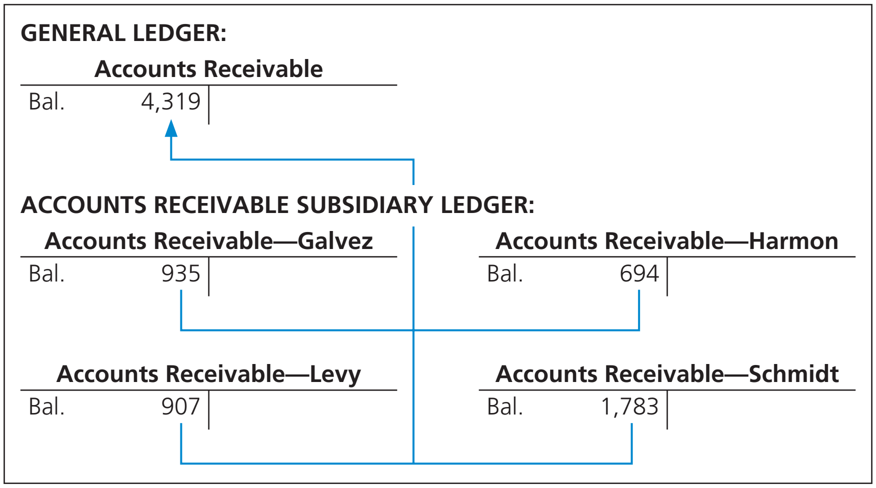
Subsidiary Ledger
Record of accounts that provides supporting details on individual balances, the total of which appears in a general ledger account.

Accounts Receivable Subsidiary Ledger

The **accounts receivable subsidiary ledger** includes a receivable account for each customer. The customer name and account balance is detailed in the subsidiary ledger. In addition, the subsidiary ledger contains detailed information such as the amount sold, received, and still due for each customer. The total of the accounts in the accounts receivable subsidiary ledger must equal the Accounts Receivable balance in the general ledger. This is demonstrated in Exhibit C-3. The Accounts Receivable balance of $4,319 in the general ledger equals the sum of the accounts in the accounts receivable subsidiary ledger ($935 + $907 + $694 + $1,783).

Accounts Receivable Subsidiary Ledger
A subsidiary ledger that includes an accounts receivable account for each customer that contains detailed information such as the amount sold, received, and owed.

Exhibit C-3 | **Accounts Receivable Subsidiary Ledger**



The Accounts Receivable account in the general ledger is called a **control account**. A control account's balance equals the sum of the balances of the accounts in a subsidiary ledger.

Control Account
An account whose balance equals the sum of the balances in a group of related accounts in a subsidiary ledger.

Accounts Payable Subsidiary Ledger

To pay debts on time, a company must know how much it owes each supplier. Accounts Payable in the general ledger shows only a single total for the amount owed on account. It does not indicate the amount owed to each vendor. Companies keep an accounts payable subsidiary ledger that is similar to the accounts receivable subsidiary ledger.

The **accounts payable subsidiary ledger** lists vendors in alphabetical order, along with amounts paid to the vendors and the remaining amounts owed to them. The total of the individual balances in the subsidiary ledger equals the Accounts Payable (control account) balance in the general ledger.

Accounts Payable Subsidiary Ledger
A subsidiary ledger that includes an accounts payable account for each vendor that contains detailed information such as the amount purchased, paid, and owed.

Don't confuse the terms customers and vendors. Remember that a company sells to customers and purchases from vendors.

The Sales Journal

Most merchandisers sell merchandise inventory on account. These credit sales are entered in the **sales journal**. The sales journal is used when recording the sale of merchandise inventory *on account*. The sale of merchandise inventory for cash is not recorded in the sales journal, but instead, it is recorded in the cash receipts journal. In addition, credit sales of assets other than merchandise inventory—for example, buildings—occur infrequently and are not recorded in the sales journal. They are, instead, recorded in the general journal.

Sales Journal
Special journal used to record credit sales.

Recording Transactions

Exhibit C-4 illustrates a sales journal (Panel A) and the related posting to the ledgers (Panel B). When a business completes a sale, the accountant enters the following information in the sales journal:

- Date
- Invoice number
- Customer name
- Transaction amount

Exhibit C-4 | Sales Journal with Posting

PANEL A—Sales Journal:

Sales Journal					Page 3
Date	Invoice No.	Customer Account Debited	Post. Ref.	Accounts Receivable DR Sales Revenue CR	Cost of Goods Sold DR Merchandise Inventory CR
2016					
Nov. 2	422	Maria Galvez	✓	935	505
13	423	Brent Harmon	✓	694	361
18	424	Susan Levy	✓	907	517
27	425	Clay Schmidt	✓	1,783	431
Nov. 30		Total		4,319	1,814
				(115/410)	(511/131)

Individual accounts receivable are posted daily.

Totals are posted at the end of the month.

Totals are posted at the end of the month.

PANEL B—Posting to the Ledgers:

Accounts Receivable Subsidiary Ledger

Maria Galvez					
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 2	S.3	935		935	

Brent Harmon					
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 13	S.3	694		694	

Susan Levy					
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 18	S.3	907		907	

Clay Schmidt					
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 27	S.3	1,783		1,783	

General Ledger

Accounts Receivable					No. 115
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	S.3	4,319		4,319	

Merchandise Inventory					No. 131
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 1	Bal.			3,885	
30	S.3		1,814	2,071	

Sales Revenue					No. 410
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	S.3		4,319		4,319

Costs of Goods Sold					No. 511
				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	S.3	1,814		1,814	

Consider the first transaction in Panel A. On November 2, the business sold merchandise inventory on account to Maria Galvez for $935 with a cost of $505. The invoice number is 422. In Chapter 5, you learned that this transaction was recorded as follows when using the general journal:

Date	Accounts and Explanation	Debit	Credit
Nov. 2	Accounts Receivable	935	
	Sales Revenue		935
	Sale on account.		
2	Cost of Goods Sold	505	
	Merchandise Inventory		505
	Recorded the cost of goods sold.		

A↑	=	L	+	E↑
Accounts Receivable↑				Sales Revenue↑

A↓	=	L	+	E↓
Merchandise Inventory↓				Cost of Goods Sold↑

When using special journals, instead of recording this transaction in the general journal, the business records the transaction in the sales journal. All of the information related to the sale appears on a single line in the sales journal as follows:

Sales Journal **Page 3**

Date	Invoice No.	Customer Account Debited	Post. Ref.	Accounts Receivable DR Sales Revenue CR	Cost of Goods Sold DR Merchandise Inventory CR
2016					
Nov. 2	422	Maria Galvez		935	505

The Post. Ref. column is not used until the transaction is posted.

This part of the journal records the sales revenue and associated receivable.

This part of the journal records the expense and the reduction of merchandise inventory.

The entry records the sales revenue and associated accounts receivable by entering the amount of the sale, $935, in the Accounts Receivable DR, Sales Revenue CR column. The entry also records the expense of the sale and the reduction of merchandise inventory by recording the cost of the sale, $505, in the Cost of Goods Sold DR, Merchandise Inventory CR column. By using a sales journal, the recording of sales is streamlined, thus saving a significant amount of time.

It's important to remember that a transaction is recorded in either the general journal or a special journal, but not in both. We are illustrating the general journal entry as a teaching tool to help you understand how the entry is recorded in the special journal. Transactions are not recorded in both journals. To do so would be to record the entry twice.

This business, like most other companies, uses a perpetual inventory system. Throughout this appendix, we illustrate the perpetual inventory system. When recording a sale, the business must record the Cost of Goods Sold and the decrease in Merchandise Inventory. If the business, instead, used a periodic inventory system, the sales journal would not need the last column (Cost of Goods Sold DR, Merchandise Inventory CR) because there is no entry recorded to Cost of Goods Sold and Merchandise Inventory at the time of the sale.

In the sales journal that we are using in this example, there are only two columns used for dollar amounts. One column records the sales revenue and accounts receivable, and the other column records the expense of the sale. Businesses that collect sales tax would need to modify the sales journal shown to include an additional column for Sales Taxes Payable. The modified sales journal would have the following headings:

Sales Journal Page 3

Date	Invoice No.	Customer Account Debited	Post. Ref.	Accounts Receivable DR	Sales Taxes Payable CR	Sales Revenue CR	Cost of Goods Sold DR Merchandise Inventory CR

Each business will modify its sales journal to fit the types of sales it makes. Remember, though, that only sales on account are recorded in the sales journal.

Posting

Entries in the sales journal are posted to both the accounts receivable subsidiary ledger and the general ledger.

Posting to the Accounts Receivable Subsidiary Ledger Individual accounts receivable are posted daily from the sales journal to the accounts receivable subsidiary ledger. For example, on November 2, the accountant posts the $935 receivable to the individual accounts receivable for Maria Galvez. The sales journal is posted daily to the subsidiary ledger to keep a current record of the amount receivable from each customer.

After posting to the subsidiary ledger, the accountant enters a check mark in the posting reference column of the sales journal (see Exhibit C-4). That lets the business know that the transaction was posted to Galvez's account.

Posting to the General Ledger At the end of the month, the accountant totals (commonly called *footing*) the Accounts Receivable DR, Sales Revenue CR, and Cost of Goods Sold DR, Merchandise Inventory CR columns. The totals of these columns are posted from the sales journal to the general ledger.

In Exhibit C-4 (Panel A), November's credit sales total $4,319. The $4,319 is posted to the Accounts Receivable and Sales Revenue accounts in the general ledger. The account numbers of each account are then printed beneath the total in the sales journal. In Panel B of Exhibit C-4, the account number for Accounts Receivable is 115 and the account number for Sales Revenue is 410. Entering these account numbers in the sales journal shows that the $4,319 has been posted to the two accounts.

The debit to Cost of Goods Sold and the credit to Merchandise Inventory for the monthly total of $1,814 are also posted at the end of the month. After posting, these accounts' numbers are entered beneath the total to show that Cost of Goods Sold and Merchandise Inventory have been updated.

As the accountant posts to the ledgers, the journal page number and journal name abbreviation are entered in the ledger account to show the source of the data. All transaction data in Exhibit C-4 originated on page 3 of the sales journal, so all posting references are S.3. "S" indicates sales journal. After posting, the Accounts Receivable balance in the general ledger should equal the sum of the individual customer balances in the subsidiary ledger.

Trace all the postings in Exhibit C-4. The way to learn an accounting information system is to study the flow of data. The arrows indicate the direction of the information.

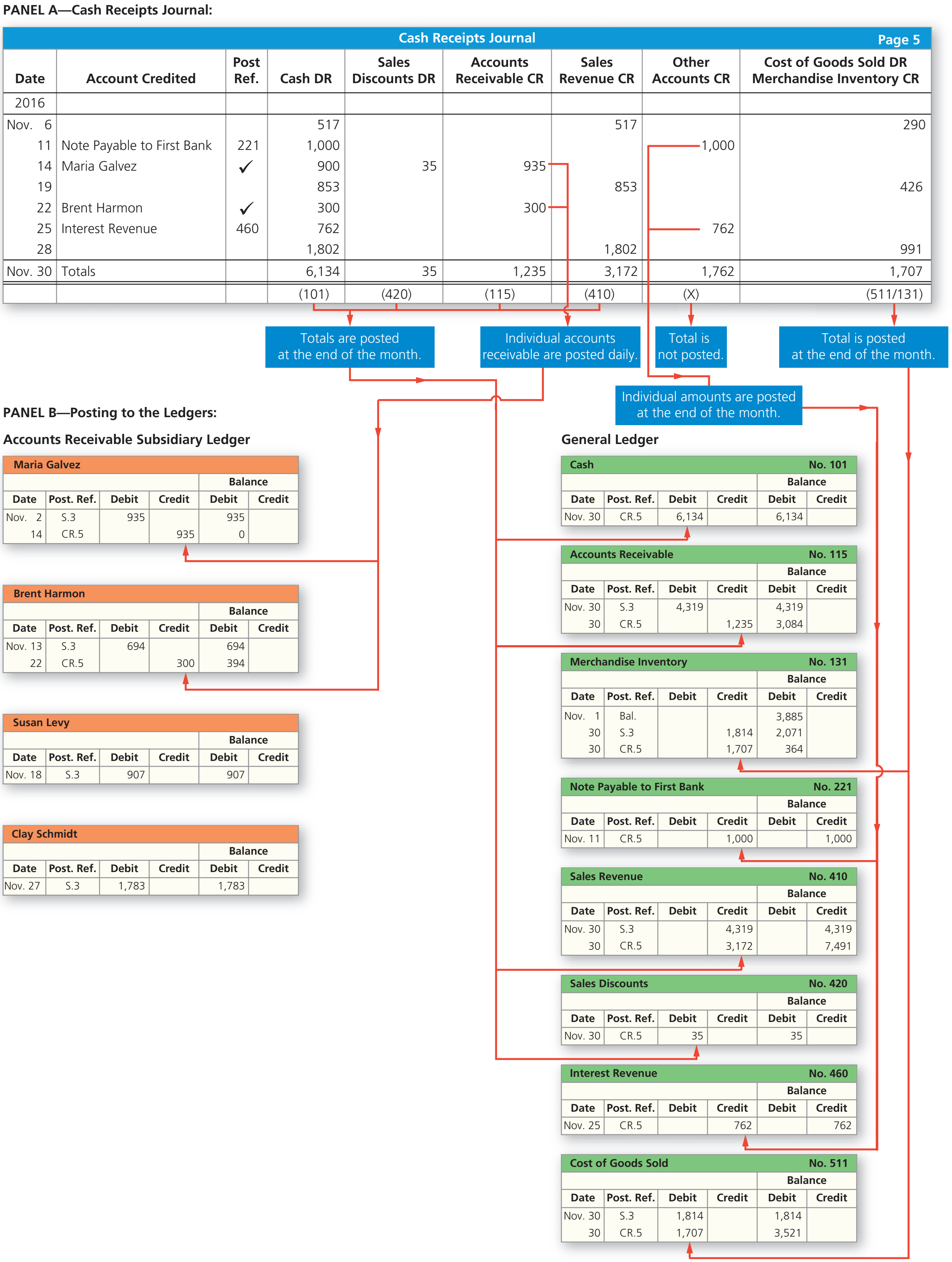
The Cash Receipts Journal

Cash Receipts Journal
Special journal used to record cash receipts.

All businesses have lots of cash transactions, and therefore a **cash receipts journal** comes in handy. The cash receipts journal is a special journal that is used to record cash receipts.

Exhibit C-5 illustrates the cash receipts journal. Every transaction recorded in this journal is a cash receipt.

Exhibit C-5 Cash Receipts Journal with Posting



PANEL A—Cash Receipts Journal:

Cash Receipts Journal Page 5

Date	Account Credited	Post Ref.	Cash DR	Sales Discounts DR	Accounts Receivable CR	Sales Revenue CR	Other Accounts CR	Cost of Goods Sold DR Merchandise Inventory CR
2016								
Nov. 6			517			517		290
11	Note Payable to First Bank	221	1,000				1,000	
14	Maria Galvez	✓	900	35	935			
19			853			853		426
22	Brent Harmon	✓	300		300			
25	Interest Revenue	460	762				762	
28			1,802			1,802		991
Nov. 30	Totals		6,134	35	1,235	3,172	1,762	1,707
			(101)	(420)	(115)	(410)	(X)	(511/131)

Totals are posted at the end of the month.

Individual accounts receivable are posted daily.

Total is not posted.

Total is posted at the end of the month.

Individual amounts are posted at the end of the month.

PANEL B—Posting to the Ledgers:

Accounts Receivable Subsidiary Ledger

Maria Galvez

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 2	S.3	935		935	
14	CR.5		935	0	

Brent Harmon

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 13	S.3	694		694	
22	CR.5		300	394	

Susan Levy

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 18	S.3	907		907	

Clay Schmidt

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 27	S.3	1,783		1,783	

General Ledger

Cash No. 101

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	CR.5	6,134		6,134	

Accounts Receivable No. 115

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	S.3	4,319		4,319	
30	CR.5		1,235	3,084	

Merchandise Inventory No. 131

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 1	Bal.			3,885	
30	S.3		1,814	2,071	
30	CR.5		1,707	364	

Note Payable to First Bank No. 221

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 11	CR.5		1,000		1,000

Sales Revenue No. 410

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	S.3		4,319		4,319
30	CR.5		3,172		7,491

Sales Discounts No. 420

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	CR.5	35		35	

Interest Revenue No. 460

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 25	CR.5		762		762

Cost of Goods Sold No. 511

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	S.3	1,814		1,814	
30	CR.5	1,707		3,521	

The cash receipts journal includes a column for debits to Cash. The next column is for debits to Sales Discounts. The main sources of cash are collections on account and cash sales. Collections on account are recorded in the Accounts Receivable CR column and the Cash DR column. Cash sales are recorded in the Sales Revenue CR column, the Cash DR column, and Cost of Goods Sold DR, Merchandise Inventory CR column. The cash receipts journal also has an Other Accounts CR column that is used to record miscellaneous cash receipt transactions.

Recording Transactions

In Exhibit C-5, the first cash receipt occurred on November 6 and was a cash sale for $517 (cost of goods sold, $290). If the transaction had been recorded in the general journal, the following entries would have been recorded:

A↑		**L**	+	**E↑**
Cash↑	=			Sales Revenue↑

A↓		**L**	+	**E↓**
Merchandise Inventory↓	=			Cost of Goods Sold↑

Date	Accounts and Explanation	Debit	Credit
Nov. 6	Cash	517	
	Sales Revenue		517
	Cash sale.		
6	Cost of Goods Sold	290	
	Merchandise Inventory		290
	Recorded the cost of goods sold.		

By recording the transaction in the cash receipts journal instead, the entries can be recorded on one line. Observe the debit to Cash and the credit to Sales Revenue ($517) and the debit to Cost of Goods Sold and credit to Merchandise Inventory ($290) for the cost of the merchandise sold.

On November 11, the business borrowed $1,000 from First Bank. If the transaction had been recorded in the general journal, the following entry would have been made:

A↑		**L↑**	+	**E**
Cash↑	=	Notes Payable↑		

Date	Accounts and Explanation	Debit	Credit
Nov. 11	Cash	1,000	
	Note Payable to First Bank		1,000
	Received cash in exchange for note.		

By recording it in the cash receipts journal instead, the accountant would record the $1,000 in the Cash DR column. The Other Accounts CR column is used for the Notes Payable credit because there is no specific credit column for borrowings. For this transaction, the account title, Note Payable to First Bank, is entered in the Account Credited column. The Other Accounts CR column is used when a transaction involves a credit entry that is not listed in the headings (columns) of the cash receipts journal. The entry on November 25 is another example. On November 25, the business received $762 cash of interest revenue. The cash receipts journal does not include a column for credits to interest revenue; therefore, the Other Accounts CR column must be used and the credit account must be written in the Account Credited column.

On November 14, the business collected $900 from Maria Galvez. Back on November 2, the business sold $935 of merchandise to Galvez and recorded the sale in the sales journal. This credit sale allowed a $35 discount for prompt payment, and Galvez paid within the discount period. The business records this cash receipt in the cash receipts journal by debiting Cash for $900 and Sales Discounts for $35 and by crediting Accounts Receivable for $935. The customer's name appears in the Account Credited column.

Posting

As with the sales journal, entries in the cash receipts journal are posted daily to the accounts receivable subsidiary ledger and monthly to the general ledger.

Posting to the Accounts Receivable Subsidiary Ledger Amounts from the cash receipts journal are posted to the accounts receivable subsidiary ledger daily. The postings are credits. Trace the $935 credit to Maria Galvez's account. It reduces her balance to zero. The $300 receipt from Brent Harmon reduces his balance to $394. After posting, the accountant enters a check mark in the posting reference column of the cash receipts journal and shows the CR.5 posting reference in the subsidiary ledger. CR.5 signifies that the posting is transferred from the cash receipts journal, page 5.

The posting reference CR.5 should not be confused with the abbreviation for credit, CR. The posting reference for the cash receipts journal always includes a page reference while the abbreviation for credit does not.

Posting to the General Ledger At the end of the month, each column in the cash receipts journal is totaled. The equality of the debits and credits is verified by comparing the sum of all debit columns to the sum of all credit columns.

Debit Columns		Credit Columns	
Cash	$ 6,134	Accounts Receivable	$ 1,235
Sales Discounts	35	Sales Revenue	3,172
Cost of Goods Sold	1,707	Other Accounts	1,762
		Merchandise Inventory	1,707
Total	$ 7,876		$ 7,876

All columns, except for the Other Accounts CR column, are posted in total to the general ledger. For example, the total for Cash ($6,134) is posted as a debit in the Cash account in the general ledger. After posting, the account number is printed below the column total in the cash receipts journal. The account number for Cash (101) appears below the column total, and likewise for the other column totals. The journal reference (CR) and page number (5) are shown in the general ledger as reference of the posting. Follow the arrows in Exhibit C-5, which track the posted amounts.

The column total for *Other Accounts* CR is *not* posted. Instead, these credits are posted individually. In Exhibit C-5, the November 11 transaction reads "Note Payable to First Bank." This $1,000 credit entry will need to be posted individually to the Note Payable to First Bank account in the general ledger. The account number (221) in the Post. Ref. column shows that the transaction amount was posted individually. The letter X below the column means that the column total was *not* posted.

After posting, the sum of the individual balances in the accounts receivable subsidiary ledger equals the balance of Accounts Receivable in the general ledger, as follows:

GENERAL LEDGER	
Accounts Receivable debit balance	$ 3,084

SUBSIDIARY LEDGER: CUSTOMER ACCOUNTS RECEIVABLE	
Customer	**Balance**
Maria Galvez	$ 0
Brent Harmon	394
Susan Levy	907
Clay Schmidt	1,783
Total Accounts Receivable	$ 3,084

These should be equal.

Try It!

6. Evenson Co. sold merchandise inventory on account to Brain Crain, $300. The cost of the goods sold was $240. What special journal should the transaction be recorded in, and what is the column used for the $300?

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises SC-3 through SC-7. MyAccountingLab

HOW ARE PURCHASES, CASH PAYMENTS, AND OTHER TRANSACTIONS RECORDED IN A MANUAL ACCOUNTING INFORMATION SYSTEM?

Learning Objective 3

Journalize and post purchases, cash payments, and other transactions in a manual accounting information system using special journals and subsidiary ledgers

In the previous section, you learned that when using a manual accounting information system, sales on account are recorded in the sales journal and cash receipts are recorded in the cash receipts journal. We now turn our attention to purchases and cash payments.

The Purchases Journal

Purchases Journal

Special journal used to record all purchases of merchandise inventory, office supplies, and other assets on account.

A merchandising business purchases merchandise inventory and other items, such as office supplies, equipment, and furniture, on account. The **purchases journal** handles these transactions plus other purchases incurred *on account*. Cash purchases are not recorded in the purchases journal; instead, they are recorded in the cash payments journal.

Exhibit C-6 illustrates a purchases journal (Panel A) and posting to the ledgers (Panel B). The purchases journal has special columns for:

- Credits to Accounts Payable
- Debits to Merchandise Inventory, Office Supplies, and Other Accounts

The Other Accounts DR columns are used for purchases on account of items other than merchandise inventory and office supplies. This business uses a perpetual inventory system. In a periodic inventory system, the Merchandise Inventory DR column would be replaced with a column titled Purchases DR.

Exhibit C-6 Purchases Journal with Posting

PANEL A—Purchases Journal:

Purchases Journal **Page 8**

							Other Accounts DR		
Date	**Vendor Account Credited**	**Terms**	**Post. Ref.**	**Accounts Payable CR**	**Merchandise Inventory DR**	**Office Supplies DR**	**Account Title**	**Post. Ref.**	**Amount**
2016									
Nov. 2	Hanes Textiles	3/15, n/30	✓	700	700				
5	Pioneer Plastics	n/30	✓	319	319				
9	City Office Supply	2/10, n/30	✓	440			Equipment	191	440
12	Advanced Printing	n/30	✓	236	236				
13	Hanes Textiles	3/15, n/30	✓	451	451				
19	City Office Supply	2/10, n/30	✓	103		103			
23	O'Leary Furniture	n/60	✓	627			Furniture	181	627
Nov. 30	Totals			2,876	1,706	103			1,067
				(210)	(131)	(161)			(X)

Individual accounts payable are posted daily.

Totals are posted at the end of the month.

Total is not posted.

Individual amounts are posted at the end of the month.

PANEL B—Posting to the Ledgers:

Accounts Payable Subsidiary Ledger

Advanced Printing

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 12	P.8		236		236

City Office Supply

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 9	P.8		440		440
19	P.8		103		543

Hanes Textiles

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 2	P.8		700		700
13	P.8		451		1,151

O'Leary Furniture

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 23	P.8		627		627

Pioneer Plastics

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 5	P.8		319		319

General Ledger

Merchandise Inventory **No. 131**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 1	Bal.			3,885	
30	S.3		1,814	2,071	
30	CR.5		1,707	364	
30	P.8	1,706		2,070	

Office Supplies **No. 161**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 30	P.8	103		103	

Furniture **No. 181**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 23	P.8	627		627	

Equipment **No. 191**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 9	P.8	440		440	

Accounts Payable **No. 210**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Nov. 30	P.8		2,876		2,876

Recording Transactions

Let's begin by looking at the first transaction. On November 2, the business purchased merchandise inventory costing $700 from Hanes Textiles. If the transaction had been recorded in the general journal, the following entry would have been recorded:

A↑	=	L↑	+	E
Merchandise Inventory↑		Accounts Payable↑		

Date	Accounts and Explanation	Debit	Credit
Nov. 2	Merchandise Inventory	700	
	Accounts Payable		700
	Purchased inventory on account.		

By recording the entry in the purchases journal, the transaction can be recorded on one line. The vendor's name (Hanes Textiles) is entered in the Vendor Account Credited column. The purchase terms of 3/15, n/30 are also entered to show the due date and the discount available. Accounts Payable is credited for the transaction amount, and Merchandise Inventory is debited.

Note the November 9 purchase of equipment from City Office Supply. The purchases journal holds no column for equipment, so the business uses the Other Accounts DR columns. Because this was a credit purchase, the accountant enters the vendor name (City Office Supply) in the Vendor Account Credited column and Equipment in the Account Title column.

Posting

Entries from the purchases journal are posted daily to the accounts payable subsidiary ledger and monthly to the general ledger.

Accounts Payable Subsidiary Ledger Individual accounts payable are posted daily from the purchases journal to the accounts payable subsidiary ledger. This allows the business to always have a current record of the accounts payable for each vendor. For example, on November 2, the business would post the $700 accounts payable credit to the Hanes Textiles account in the accounts payable subsidiary ledger. After posting, the accountant enters a check mark in the posting reference column of the purchases journal to indicate that the amount was posted in the subsidiary ledger. In addition, the posting reference (P.8) is printed in the subsidiary ledger.

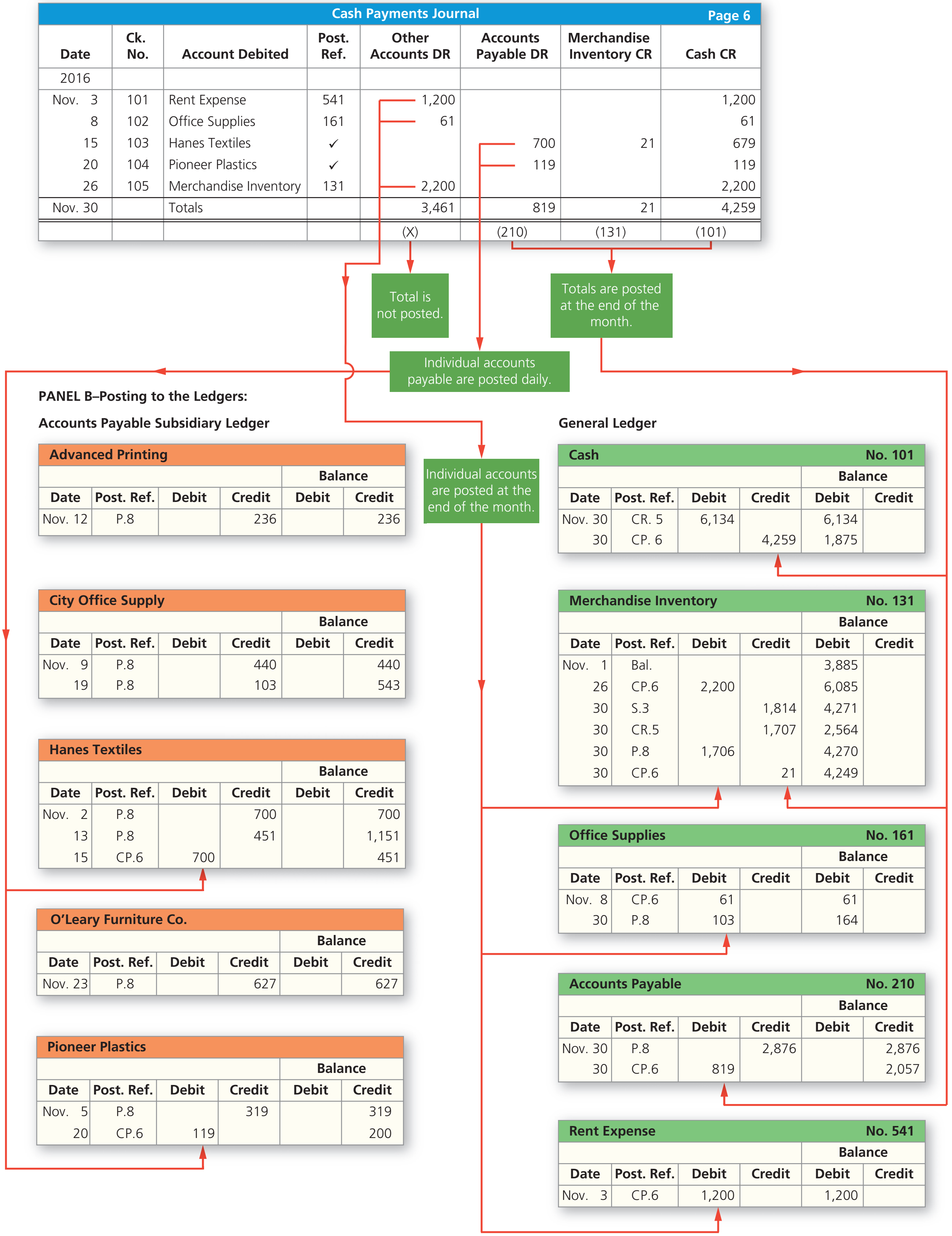
Posting to the General Ledger Posting from the purchases journal is similar to posting from the other special journals. Exhibit C-6, Panel B, illustrates the posting process. At the end of each month, each column in the journal is totaled. All totals, except the Other Accounts DR Amount column, are posted to the general ledger. For example, the $2,876 Accounts Payable CR total is posted to the Accounts Payable account in the general ledger as a credit. After posted, the account number is listed in the purchases journal and the posting reference is listed in the general ledger. The column total for Other Accounts DR Amount is *not* posted. Instead, these debits are posted individually to the specific accounts, as done in the cash receipts journal. After all posting is complete, the Accounts Payable balance in the general ledger should equal the sum of the individual vendor balances in the subsidiary ledger.

The Cash Payments Journal

Businesses make most cash payments by check, and all checks (and payments of currency) are recorded in the **cash payments journal**. This special journal is also called the *check register* and the *cash disbursements journal*. Exhibit C-7 shows the cash payments journal, with the ledgers in Panel B.

Cash Payments Journal
Special journal used to record cash payments by check and currency.

Exhibit C-7 | Cash Payments Journal with Posting



PANEL A–Cash Payments Journal:

Cash Payments Journal **Page 6**

Date	Ck. No.	Account Debited	Post. Ref.	Other Accounts DR	Accounts Payable DR	Merchandise Inventory CR	Cash CR
2016							
Nov. 3	101	Rent Expense	541	1,200			1,200
8	102	Office Supplies	161	61			61
15	103	Hanes Textiles	✓		700	21	679
20	104	Pioneer Plastics	✓		119		119
26	105	Merchandise Inventory	131	2,200			2,200
Nov. 30		Totals		3,461	819	21	4,259
				(X)	(210)	(131)	(101)

Total is not posted.

Totals are posted at the end of the month.

Individual accounts payable are posted daily.

Individual accounts are posted at the end of the month.

PANEL B–Posting to the Ledgers:

Accounts Payable Subsidiary Ledger

Advanced Printing

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 12	P.8		236		236

City Office Supply

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 9	P.8		440		440
19	P.8		103		543

Hanes Textiles

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 2	P.8		700		700
13	P.8		451		1,151
15	CP.6	700			451

O'Leary Furniture Co.

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 23	P.8		627		627

Pioneer Plastics

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 5	P.8		319		319
20	CP.6	119			200

General Ledger

Cash **No. 101**

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	CR. 5	6,134		6,134	
30	CP. 6		4,259	1,875	

Merchandise Inventory **No. 131**

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 1	Bal.			3,885	
26	CP.6	2,200		6,085	
30	S.3		1,814	4,271	
30	CR.5		1,707	2,564	
30	P.8	1,706		4,270	
30	CP.6		21	4,249	

Office Supplies **No. 161**

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 8	CP.6	61		61	
30	P.8	103		164	

Accounts Payable **No. 210**

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 30	P.8		2,876		2,876
30	CP.6	819			2,057

Rent Expense **No. 541**

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 3	CP.6	1,200		1,200	

The cash payments journal has two debit columns—one for Other Accounts and one for Accounts Payable. It has two credit columns—one for Merchandise Inventory (for purchase discounts) and one for Cash. This special journal also has columns for the date and check number of each cash payment and the account debited.

Recording Transactions

Let's review the first transaction listed in the cash payments journal. On November 3, the business paid cash of $1,200 for rent. This payment of cash is recorded in the cash payments journal by entering $1,200 in the Cash CR column and the Other Accounts DR column. The Other Accounts DR column is used to record debits to accounts for which no special column exists. The business enters the name of the other account used, Rent Expense, in the Account Debited column. The Other Accounts DR column was also used on November 8 for the purchase of office supplies for cash and on November 26 for the purchase of Merchandise Inventory with cash.

On November 15, the business paid the vendor, Hanes Textiles, on account, with credit terms of 3/15, n/30 (for details, see the first transaction in the purchases journal, Exhibit C-6). Paying within the discount period allowed a 3% discount ($21), and the business paid the remaining $679 ($700 less the $21 discount). If the business had recorded the transaction in the general journal, the following would have been recorded:

A↓	=	L↓	+	E
Cash↓ Merchandise Inventory↓	=	Accounts Payable↓		

Date	Accounts and Explanation	Debit	Credit
Nov. 15	Accounts Payable	700	
	Cash		679
	Merchandise Inventory		21
	Paid within discount period.		

Instead, the business will record the transaction in the cash payments journal. The entry will be recorded by entering the $679 in the Cash CR column. The Accounts Payable DR column will be recorded for $700, and the discount of $21 will be entered into the Merchandise Inventory CR column. All transactions involving cash payments are recorded in the cash payments journal.

Posting

Entries in the cash payments journal are posted daily to the accounts payable subsidiary ledger and monthly to the general ledger.

Posting to the Accounts Payable Subsidiary Ledger Posting from the cash payments journal is similar to posting from the cash receipts journal. Individual vendor amounts (accounts payable) are posted daily to the accounts payable subsidiary ledger. The postings are debits and reduce the balance in the individual accounts payable account. Trace the $700 payment to Hanes Textiles. The $700 reduces the balance in the Hanes's subsidiary account to $451. After posting, a check mark is entered in the cash payments journal and the posting reference (CP.6) is printed in the subsidiary ledger.

Posting to the General Ledger At the end of the month, each column is totaled. The totals, except for the Other Accounts DR column, are posted to the specific general ledger accounts. After posting, the account number is printed below the column total in the cash payments journal and the posting reference is printed in the general ledger.

Amounts in the Other Accounts DR column are posted individually (for example, Rent Expense—debit $1,200). When each Other Account DR is posted to the general ledger, the account number is printed in the Post. Ref. column. The letter X below the column signifies that the total is *not* posted.

To review accounts payable, companies list individual vendor balances in the accounts payable subsidiary ledger. The general ledger and subsidiary ledger totals should agree.

GENERAL LEDGER	
Accounts Payable credit balance	$ 2,057

SUBSIDIARY LEDGER: ACCOUNTS PAYABLE	
Vendor	**Balance**
Advanced Printing	$ 236
City Office Supply	543
Hanes Textiles	451
O'Leary Furniture Co.	627
Pioneer Plastics	200
Total Accounts Payable	$ 2,057

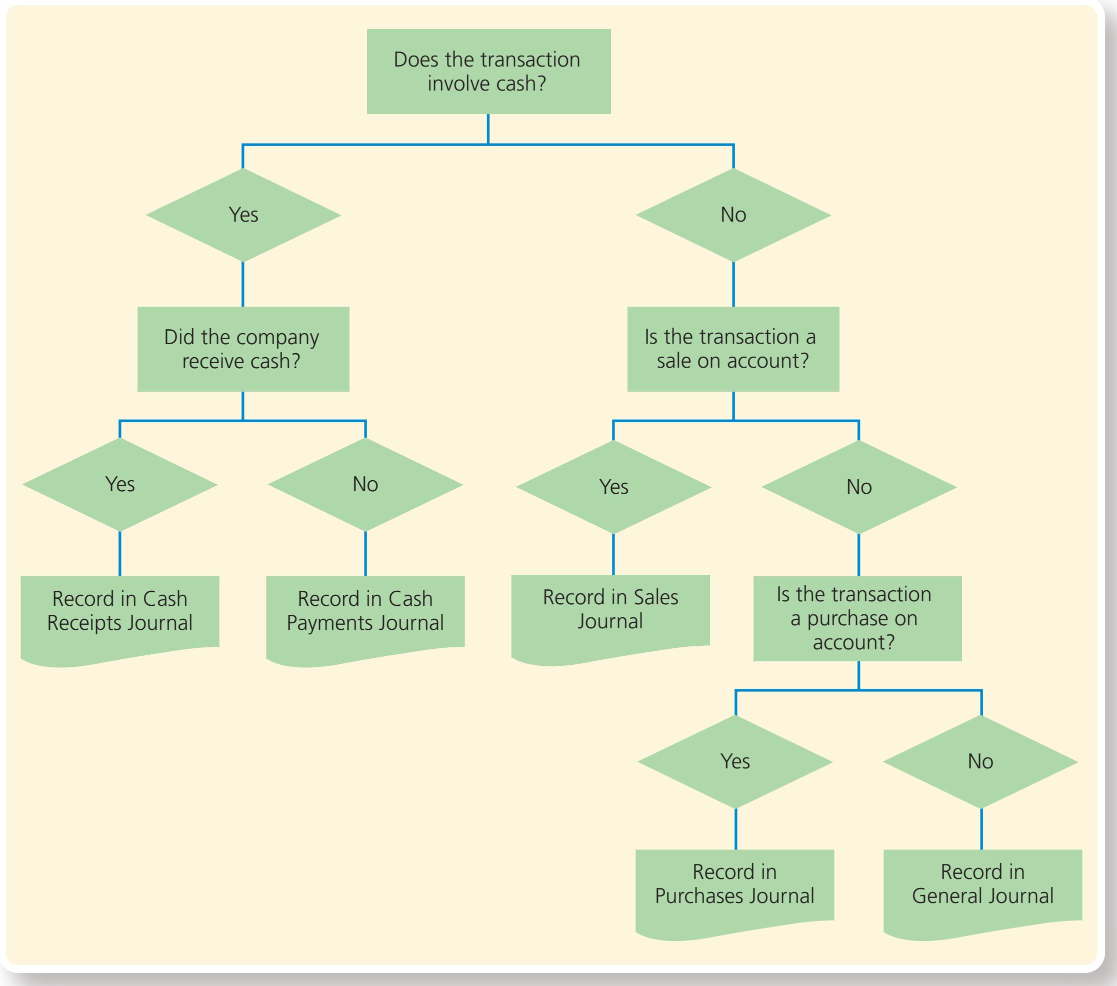
These should be equal.

The General Journal

Special journals save time recording repetitive transactions. But some transactions don't fit a special journal. Examples include the adjusting entries for depreciation, the expiration of prepaid insurance, and the accrual of salaries payable at the end of the period. Companies also use the general journal for sales returns and allowances and purchase returns and allowances. All accounting information systems need a general journal. The adjusting entries and the closing entries are recorded in the general journal, along with other nonroutine transactions.

As we have seen, a manual accounting information system involves five journals: sales journal, cash receipts journal, purchases journal, cash payments journal, and the general journal. It's important to remember that transactions are recorded in either one of the special journals or in the general journal, but not both. Exhibit C-8 (on the next page) provides a summary of all five journals that will help you decide which journal to use when recording transactions in a manual system.

Exhibit C-8 | **Recording Transactions in Special Journals**



Try It!

7. Fiscella Co. paid monthly rent of $2,000. What special journal should the transaction be recorded in? What columns will be used?

Check your answer online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercises SC-8 through SC-12. MyAccountingLab

HOW ARE TRANSACTIONS RECORDED IN A COMPUTERIZED ACCOUNTING INFORMATION SYSTEM?

Learning Objective 4

Describe how transactions are recorded in a computerized accounting information system

A computerized accounting information system has two basic components:

- Hardware
- Software

Hardware is the electronic equipment: computers, monitors, printers, and the network that connects them. Most systems require a **network** to link computers. In a networked system, the server stores the program and the data.

Software is the set of programs that drives the computer. Accounting software reads, edits, and stores transaction data. It also generates the reports that businesses can use to make decisions. Many software packages are flexible. For example, a small cleaning business may be only partly computerized. This small business may use the computer for employee payrolls, but other parts of the accounting information system may be manual.

Hardware
Electronic equipment that includes computers, monitors, printers, and the network that connects them.

Network
The system of electronic linkages that allows different computers to share the same information.

Software
Set of programs or instructions that drives the computer to perform the work desired.

Entry-Level Software

With increased availability of affordable computerized accounting information systems, more and more businesses are completing all of their accounting on the computer. Two popular entry-level software packages are QuickBooks and Sage 50 Accounting. Both of these programs allow businesses to enter sales of services and merchandise inventory. In addition, these programs can record expenses and produce reports such as financial statements. These computerized accounting information systems are relatively easy to use, often requiring little knowledge of accounting or GAAP. Computerized accounting software allows businesses to organize finances, track sales and expenses, and complete recordkeeping. QuickBooks and Sage 50 Accounting, though, work best for small businesses. As businesses grow and expand, they need a software system that can handle more advanced processes and transactions.

Enterprise Resource Planning (ERP) Systems

Larger companies will often use an **enterprise resource planning (ERP)** system to manage their data. ERP systems such as SAP® and Oracle® can integrate all company data into a single database. ERP feeds the data into software for all company activities—from purchasing to production and customer service.

Enterprise Resource Planning (ERP)
Software system that can integrate all of a company's functions, departments, and data into a single system.

Advantages of ERP systems include:

- Reduce operating costs.
- Help companies adjust to changes.
- Replace separate software systems, such as sales and payroll.

Disadvantages of ERP systems include:

- ERP is expensive. Major installations can cost millions of dollars.
- Implementation also requires a large commitment of time and people.

Many ERP systems and entry-level systems can be offered in the "cloud." Cloud computing refers to purchasing software and data storage from a third party. In **cloud computing**, the

Cloud Computing
Software and data are stored on a third-party server instead of by the business and can be accessed by employees via the Internet.

software and data are stored on the third-party server instead of by the business. Employees access the software and data via the Internet by using a Web browser. Cloud computing can reduce costs by a significant amount for many businesses.

QuickBooks

One way to understand how computerized accounting software works is to view how transactions are handled in this type of system. We are now going to look at a common entry-level system, QuickBooks. Although your instructor might not have you complete any assignments using QuickBooks, it will be helpful to view the way QuickBooks handles common accounting entries.

Most computerized accounting information systems are organized by function or task. A user can select a function, such as creating an invoice, from a menu. (A menu is a list of options for choosing computer functions.) QuickBooks uses a navigation panel located on the left-hand side of the screen that allows users to select from a menu of options such as Customers, Vendors, Employees, Transactions, and Reports. The tabs (Customers, Vendors, Employees, Transactions, and Reports) on the navigation panel handle all transactions that a company would use. Transactions involving customers, including invoices (accounts receivable), receipt of payments, and sales returns, would be recorded on the Customers tab. The Vendors tab handles transactions involving vendors, including entering bills (accounts payable), paying bills, and processing refunds. The financial reports of a business such as the income statement and balance sheet are also accessible from the navigation panel.

ETHICS

Should I change the transaction?

Girmanesh Landin is responsible for recording all of the transactions for Marshall's Home Care. This is Girmanesh's first job as a staff accountant, and she wants to do a good job. Last week, she recorded several cash payments for bills in the computerized accounting information system. She now realizes that she selected the incorrect cash account. She selected the savings account instead of the checking account. Girmanesh knows that she could go back into each transaction and make the correction without anyone knowing that she made the mistake, but she is unsure of what to do. Should Girmanesh make the correction?

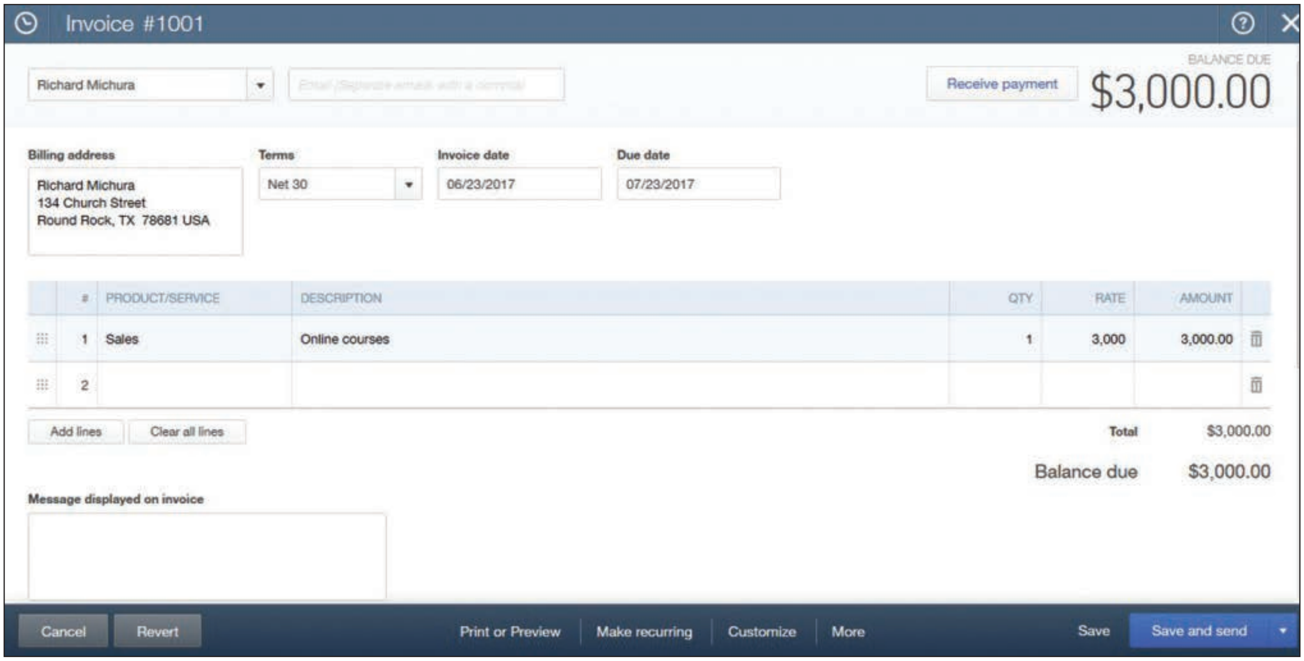
Solution

Because Girmanesh is new to the job, she should find out the procedure for making corrections in the accounting information system before she changes each transaction. Attempting to hide her mistakes could cause her integrity to be questioned because it would appear that she was trying to cover up things rather than ask for clarification and help. Most businesses will prefer that Girmanesh make a separate correcting entry instead of going back in and changing the incorrect transaction. This procedure allows for businesses to have a record of the original transaction and then the correcting entry. It is generally never a good idea to change transactions that have already been recorded, and many software systems will not allow such actions as a method to prevent fraud.

Creating a Sales Invoice

Suppose on June 23, Smart Touch Learning performed $3,000 of services for Richard Michura on account. To record this transaction in QuickBooks, Smart Touch Learning would need to create an invoice for Richard. Exhibit C-9 shows the invoice the company created. Notice that there are no debits and credits on the invoice. In a computerized accounting information system, the business does not have to record the transaction in debit and credit format. Instead, by creating the invoice, the software knows automatically to record a debit to Accounts Receivable—Michura and a credit to Sales Revenue. After creating the invoice, the software posts the transaction to the appropriate general ledger accounts. There is no need for the business to manually post the transaction; the software takes care of the posting process.

Exhibit C-9 | **Invoice**



Invoice #1001

Richard Michura

BALANCE DUE $3,000.00

Billing address
Richard Michura
134 Church Street
Round Rock, TX 78681 USA

Terms: Net 30

Invoice date: 06/23/2017

Due date: 07/23/2017

#	PRODUCT/SERVICE	DESCRIPTION	QTY	RATE	AMOUNT
1	Sales	Online courses	1	3,000	3,000.00
2					

Total $3,000.00

Balance due $3,000.00

Message displayed on invoice

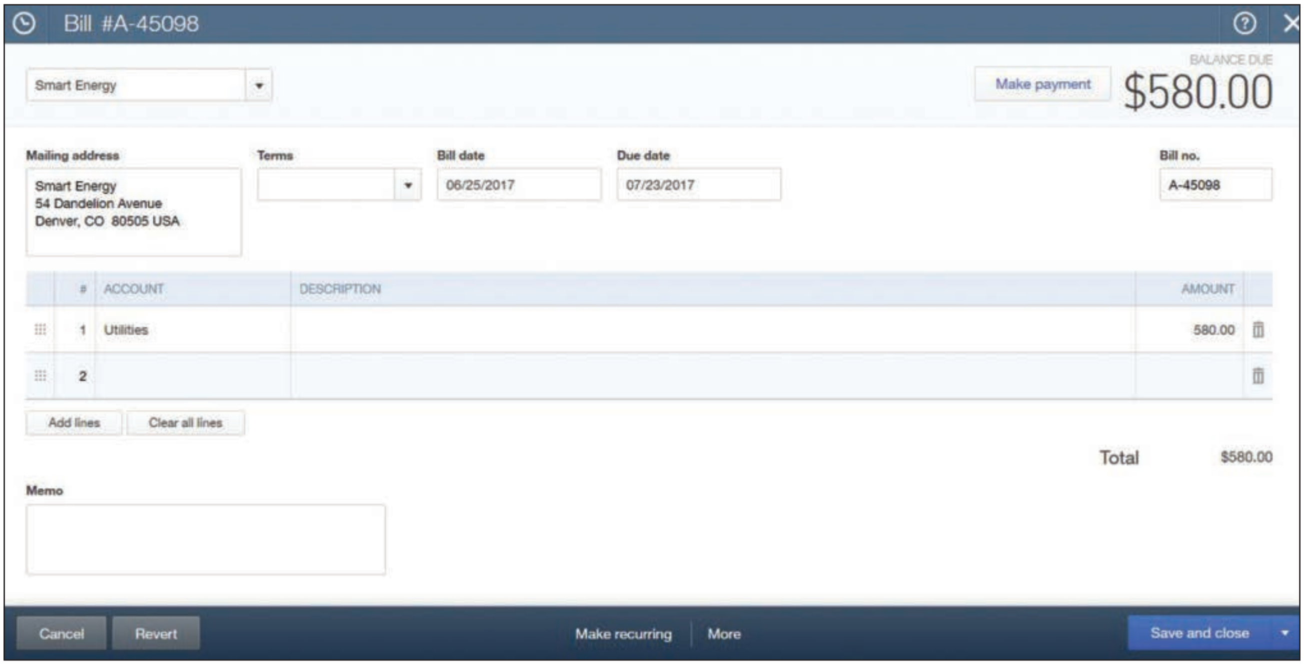
Quickbooks. Reprinted by permission.

When Smart Touch Learning receives the $3,000 from the customer, the accounting clerk will enter the transaction in the Customers tab of QuickBooks by locating the customer's invoice and selecting the "Receive payment" action. By doing this, QuickBooks identifies that the invoice has been paid and that Richard Michura has no further outstanding balance.

Entering Bills

When a business needs to record a bill received, it will use the Vendors tab of QuickBooks. Suppose that on June 25, Smart Touch Learning receives a $580 bill for utilities. Exhibit C-10 shows the bill that the company will record in QuickBooks. When Smart Touch Learning saves the bill, the software will automatically record a debit to Utilities Expense and credit to Accounts Payable—Smart Energy.

Exhibit C-10 | **Bill**



Bill #A-45098

Smart Energy

BALANCE DUE $580.00

Mailing address
Smart Energy
54 Dandelion Avenue
Denver, CO 80505 USA

Terms:

Bill date: 06/25/2017

Due date: 07/23/2017

Bill no.: A-45098

#	ACCOUNT	DESCRIPTION	AMOUNT
1	Utilities		580.00
2			

Total $580.00

Memo

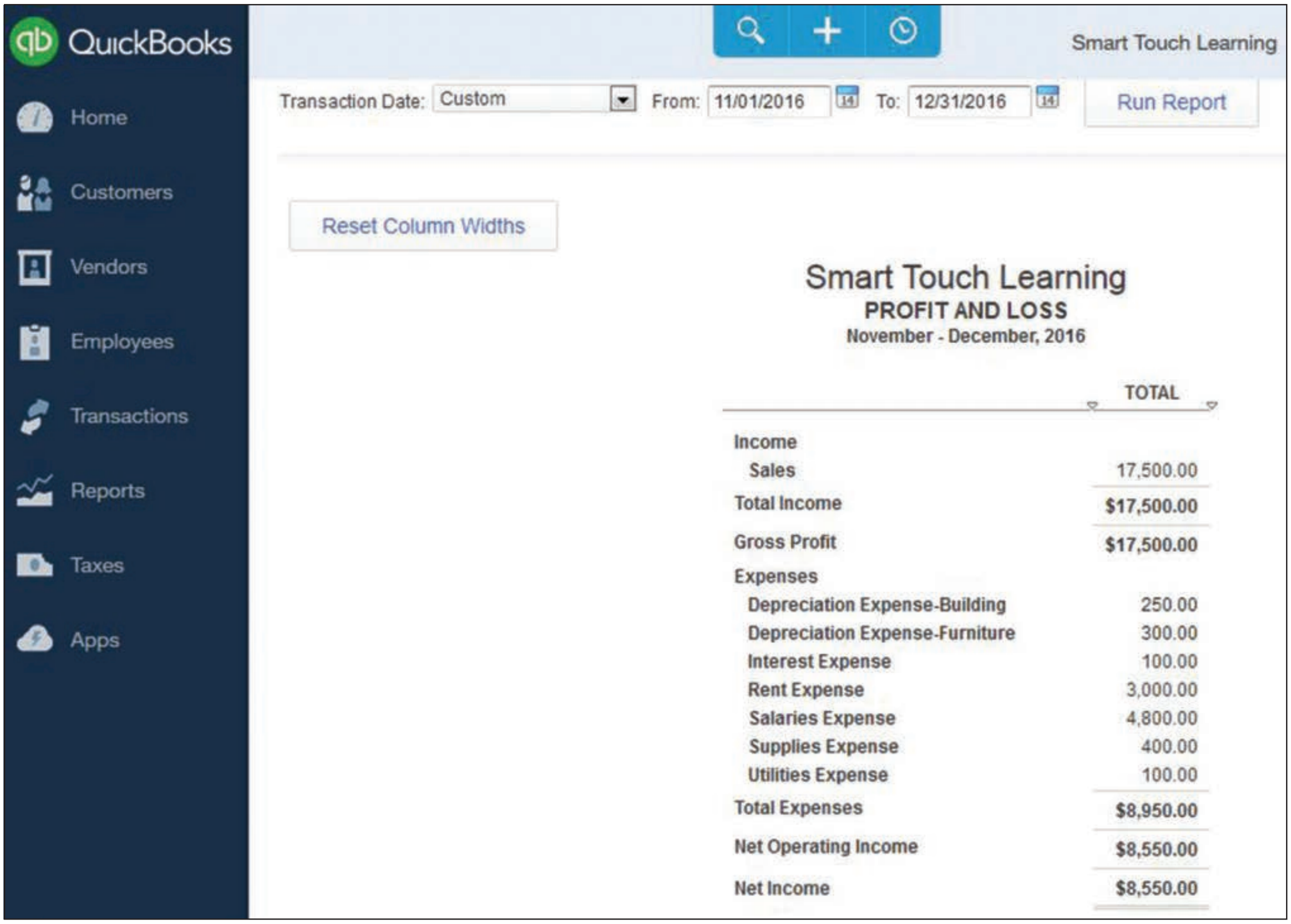
Quickbooks. Reprinted by permission.

On July 5, when Smart Touch Learning makes payment on the bill, it will enter the payment in the Vendors tab of QuickBooks. The accounting clerk will select the bill to be paid and record the payment by selecting the “Make payment” action. Again, the software takes care of recording the journal entry and posting to the ledger accounts.

Viewing Financial Statements

QuickBooks has the ability to produce numerous reports such as the income statement (called Profit & Loss in QuickBooks), balance sheet, and statement of cash flows. The software can also be used to create accounts receivable and accounts payable aging schedules. Exhibit C-11 shows an example of an income statement for Smart Touch Learning.

Exhibit C-11 | **Income Statement**



Transaction Date: Custom From: 11/01/2016 To: 12/31/2016

Smart Touch Learning
PROFIT AND LOSS
November - December, 2016

	TOTAL
Income	
Sales	17,500.00
Total Income	$17,500.00
Gross Profit	$17,500.00
Expenses	
Depreciation Expense-Building	250.00
Depreciation Expense-Furniture	300.00
Interest Expense	100.00
Rent Expense	3,000.00
Salaries Expense	4,800.00
Supplies Expense	400.00
Utilities Expense	100.00
Total Expenses	$8,950.00
Net Operating Income	$8,550.00
Net Income	$8,550.00

Quickbooks. Reprinted by permission.

One of the many benefits of using a computerized accounting information system is the ease with which reports are created. For most reports needed, the software includes prebuilt templates that can be used. In addition, the software automatically transfers the amounts from the general ledger to the financial statements. The only thing the accountant needs to do is set the correct time period and review the financial statements for accuracy.

Try It!

8. Fill in the missing information.

a. _______________ is the set of programs that drives the computer.

b. Most systems require a(n) _______________ to link computers.

c. _______________ is the electronic equipment used in a computerized accounting information system.

Check your answers online in MyAccountingLab or at http://www.pearsonglobaleditions.com/Horngren.

For more practice, see Short Exercise SC-13. MyAccountingLab

REVIEW

> Things You Should Know

1. What is an accounting information system?

- An accounting information system (AIS) collects, records, stores, and processes accounting data to produce information that is useful for decision makers.
- An effective accounting information system provides control, compatibility, flexibility, relevance, and a positive cost/benefit relationship.
- An accounting information system has three basic components:
    - Source documents and input devices
    - Processing and storage
    - Outputs

2. How are sales and cash receipts recorded in a manual accounting information system?

- In a manual system, businesses use special journals that are designed to record a specific type of transaction. The four special journals and their uses are:
    - Sales journal—records sales on account
    - Cash receipts journal—records cash receipts
    - Purchases journal—records purchases on account
    - Cash payments journal—records cash payments
- Subsidiary ledgers are used to hold individual accounts that support a general ledger account. Two common subsidiary ledgers are the accounts receivable subsidiary ledger and accounts payable subsidiary ledger.
- Credit sales are recorded in the sales journal, which uses two columns—Accounts Receivable DR, Sales Revenue CR and Cost of Goods Sold DR, Merchandise Inventory CR.
- Cash receipts are recorded in the cash receipts journal, which includes a Cash DR column and various other debit and credit columns.

3. How are purchases, cash payments, and other transactions recorded in a manual accounting information system?

- Purchases on account are recorded in the purchases journal, which includes an Accounts Payable CR column and various other debit columns.
- Cash payments are recorded in the cash payments journal, which includes a Cash CR column and various other debit and credit columns.
- The general journal is used for transactions that aren't recorded in one of the special journals, such as adjusting and closing entries.

4. How are transactions recorded in a computerized accounting information system?

- A computerized accounting information system has two basic components:
  - Hardware—the electronic equipment
  - Software—the set of programs that drives the computer
- Entry-level software, such as QuickBooks and Sage 50 Accounting, is often used by small businesses.
- Larger companies use an enterprise resource planning (ERP) system to manage their data.

> Summary Problem

Houlihan Company completed the following selected transactions during March 2017:

Mar. 4	Received $500 for a cash sale of merchandise inventory to a customer (cost, $319).
6	Received $60 on account from Brady Lee. The full invoice amount was $65, but Lee paid within the discount period to gain the $5 discount.
9	Received $1,080 on a note receivable from Beverly Mann. This amount includes the $1,000 note receivable plus interest revenue.
15	Received $800 for a cash sale of merchandise inventory to a customer (cost, $522).
24	Borrowed $2,200 by signing a note payable to Interstate Bank.
27	Received $1,200 on account from Lance Albert. Collection was received after the discount period, as there was no discount.

Requirements

The general ledger showed the following balances at February 28: Cash, $1,117; Accounts Receivable, $2,790; Note Receivable—Beverly Mann, $1,000; and Merchandise Inventory, $1,819. The accounts receivable subsidiary ledger at February 28 contained debit balances as follows: Lance Albert, $1,840; Melinda Fultz, $885; Brady Lee, $65.

1. Record the transactions in the cash receipts journal, page 7.
2. Compute column totals at March 31.
3. Post from the cash receipts journal to the general ledger and the accounts receivable subsidiary ledger. Use four-column accounts. Use complete posting references, including the following account numbers: Cash, 11; Accounts Receivable, 12; Note Receivable—Beverly Mann, 13; Merchandise Inventory, 14; Note Payable—Interstate Bank, 22; Sales Revenue, 41; Sales Discounts, 42; Interest Revenue, 46; and Cost of Goods Sold, 51. Insert a check mark (√) in the posting reference column for each February 28 account balance.
4. Balance the Accounts Receivable subsidiary ledger with the Accounts Receivable account in the general ledger.

> Solution

Requirements 1 and 2

Cash Receipts Journal **Page 7**

Date	Account Credited	Post. Ref.	Cash DR	Sales Discounts DR	Accounts Receivable CR	Sales Revenue CR	Other Accounts CR	Cost of Goods Sold DR Merchandise Inventory CR
2017								
Mar. 4			500			500		319
6	Brady Lee	✓	60	5	65			
9	Note Receivable-Beverly Mann	13	1,080				1,000	
	Interest Revenue	46					80	
15			800			800		522
24	Note Payable-Interstate Bank	22	2,200				2,200	
27	Lance Albert	✓	1,200		1,200			
31			5,840	5	1,265	1,300	3,280	841
			(11)	(42)	(12)	(41)	(X)	(51/14)

Requirement 3

ACCOUNTS RECEIVABLE SUBSIDIARY LEDGER

Lance Albert

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Feb. 28	✓			1,840	
Mar. 27	CR.7		1,200	640	

Melinda Fultz

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Feb. 28	✓			885	

Brady Lee

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Feb. 28	✓			65	
Mar. 6	CR.7		65	0	

GENERAL LEDGER

Cash **No. 11**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Feb. 28	✓			1,117	
Mar. 31	CR.7	5,840		6,957	

Accounts Receivable **No. 12**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Feb. 28	✓			2,790	
Mar. 31	CR.7		1,265	1,525	

Note Receivable—Beverly Mann **No. 13**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Feb. 28	✓			1,000	
Mar. 9	CR.7		1,000	0	

Merchandise Inventory **No. 14**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Feb. 28	✓			1,819	
Mar. 31	CR.7		841	978	

Note Payable—Interstate Bank **No. 22**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Mar. 24	CR.7		2,200		2,200

Sales Revenue **No. 41**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Mar. 31	CR.7		1,300		1,300

Sales Discounts **No. 42**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Mar. 31	CR.7	5		5	

Interest Revenue **No. 46**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Mar. 9	CR.7		80		80

Cost of Goods Sold **No. 51**

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Mar. 31	CR.7	841		841	

Requirement 4

GENERAL LEDGER

Accounts Receivable debit balance	$ 1,525

SUBSIDIARY LEDGER: CUSTOMER ACCOUNTS RECEIVABLE

Customer	**Balance**
Lance Albert	$ 640
Melinda Fultz	885
Brady Lee	0
Total Accounts Receivable	$ 1,525

> Key Terms

Accounting Information System (AIS) (p. 902)
Accounts Payable Subsidiary Ledger (p. 907)
Accounts Receivable Subsidiary Ledger (p. 906)
Cash Payments Journal (p. 916)
Cash Receipts Journal (p. 910)
Cloud Computing (p. 921)
Control Account (p. 907)
Enterprise Resource Planning (ERP) (p. 921)
Hardware (p. 921)
Network (p. 921)
Purchases Journal (p. 914)
Sales Journal (p. 907)
Server (p. 904)
Software (p. 921)
Source Document (p. 903)
Special Journal (p. 905)
Subsidiary Ledger (p. 905)

> Quick Check

Learning Objective 1

1. Which of the following benefits of an effective accounting information system provides safeguards for a business's assets and reduces the likelihood of fraud and errors?
   - **a.** Flexibility
   - **b.** Relevance
   - **c.** Control
   - **d.** Compatibility

Learning Objective 1

2. The outputs of a computerized accounting information system are called
   - **a.** reports.
   - **b.** software.
   - **c.** processing.
   - **d.** purchase invoices.

Learning Objective 2

3. Which of the following is not a special journal?
   - **a.** Sales journal
   - **b.** General journal
   - **c.** Cash receipts journal
   - **d.** Purchases journal

Learning Objective 2

4. Mountain Day Spa sold merchandise inventory on credit to Marvin Smith, $400. Cost of goods sold was $250. When using a manual accounting information system, where should Mountain record this transaction, and what is the appropriate column in which to record the $250?
   - **a.** Sales journal; Accounts Receivable DR, Sales Revenue CR
   - **b.** Cash receipts journal; Cash DR, Sales Revenue CR
   - **c.** Sales journal; Cost of Goods Sold DR, Merchandise Inventory CR
   - **d.** Cash receipts journal; Cash DR, Accounts Receivable CR

Learning Objective 2

5. Which of the following correctly describes the posting of transactions from the sales journal?
   - **a.** Individual accounts receivable are posted daily to the general ledger.
   - **b.** At the end of the month, the totals of the columns are posted to the general ledger.
   - **c.** Transactions are posted daily to the general ledger.
   - **d.** The total of the Accounts Receivable DR, Sales Revenue CR column is posted to the accounts receivable subsidiary ledger.

Learning Objective 3

6. Centex Sound Systems purchased merchandise inventory costing $8,000 from Flower Co. on account. Where should Centex record this transaction, and what account is credited?
   - **a.** Cash payments journal; credit Cash
   - **b.** Sales journal; credit Sales Revenue

- **c.** Purchases journal; credit Accounts Payable
- **d.** General journal; credit Merchandise Inventory

Learning Objective 3

7. Every transaction recorded in the cash payments journal includes a
   - **a.** credit to Cash.
   - **b.** debit to Accounts Receivable.
   - **c.** debit to Sales Discounts.
   - **d.** debit to Cash.

Learning Objective 3

8. When using a manual accounting information system, which of the following transactions would be recorded in the general journal?
   - **a.** Depreciation of office furniture
   - **b.** Cash payment of rent
   - **c.** Sale of merchandise inventory on account
   - **d.** Purchase of merchandise inventory on account

Learning Objective 4

9. Which is a disadvantage of an enterprise resource planning (ERP) system?
   - **a.** Helps companies adjust to changes
   - **b.** Can replace separate software systems
   - **c.** Can reduce operating costs
   - **d.** Implementation requires a large commitment of time and people

Check your answers at the end of the chapter.

ASSESS YOUR PROGRESS

> Review Questions

1. What is an accounting information system (AIS)?
2. What does an effective accounting information system provide?
3. Explain the three basic components of an accounting information system.
4. What is a special journal?
5. What is the purpose of a subsidiary ledger?
6. What is a control account?
7. List the four special journals often used in a manual accounting information system. What types of transactions are recorded in each of the special journals?
8. Explain the posting process of the sales journal.
9. Provide some examples of transactions that would be recorded in the Other Accounts CR column of the cash receipts journal.
10. What are the columns that are typically used in the purchases journal?
11. Explain the posting process of the cash payments journal.
12. When is the general journal used in a manual accounting information system? Provide some examples of transactions that would be recorded in the general journal.
13. Explain the two components of a computerized accounting information system.
14. What are two common entry-level accounting software systems used by small businesses?

15. What is an enterprise resource planning (ERP) system? What are the advantages and disadvantages of using an ERP?
16. How is QuickBooks organized?
17. How would a business record a sale of services on account in QuickBooks?
18. How would a business record a bill received in QuickBooks?

> Short Exercises

Learning Objective 1

SC-1 Evaluating features of an effective accounting information system

In Vogue, a T-shirt business, is growing fast and needs a better accounting information system. Consider the features of an effective system. Which features are most important? Why? Which feature must you consider if your financial resources are limited?

Learning Objective 1

SC-2 Defining components of an accounting information system

Match each component of a computerized accounting information system with an example. Components may be used more than once.

Example	Component
1. Server	A. Source documents and input devices
2. Bank checks	B. Processing and storage
3. Reports	C. Outputs
4. Keyboard	
5. Software	
6. Financial statements	
7. Bar code scanner	

Learning Objective 2

SC-3 Identifying special journals

Use the following abbreviations to indicate the journal in which you would record transactions a through n.

J = General journal
S = Sales journal
CR = Cash receipts journal
P = Purchases journal
CP = Cash payments journal

Transactions:

_____ **a.** Cash purchase of merchandise inventory
_____ **b.** Collection of dividend revenue earned on an investment
_____ **c.** Prepayment of insurance
_____ **d.** Borrowing money on a long-term note payable
_____ **e.** Purchase of equipment on account
_____ **f.** Cost of goods sold along with a credit sale
_____ **g.** Cash sale of merchandise inventory
_____ **h.** Payment of rent

______ **i.** Depreciation of computer equipment
______ **j.** Purchase of merchandise inventory on account
______ **k.** Collection of accounts receivable
______ **l.** Expiration of prepaid insurance
______ **m.** Sale on account
______ **n.** Payment on account

SC-4 Recording transactions in a sales journal

Learning Objective 2

Jun. 1	Sold merchandise inventory on account to Flynn Jackson, $1,210. Cost of goods, $920. Invoice no. 101.
8	Sold merchandise inventory on account to Ike Floyd, $2,100. Cost of goods, $1,660. Invoice no. 102.
13	Sold merchandise inventory on account to Jessica Till, $400. Cost of goods, $230. Invoice no. 103.
28	Sold merchandise inventory on account to Greta Ward, $870. Cost of goods, $630. Invoice no. 104.

Use the following sales journal to record the preceding transactions.

Sales Journal **Page 1**

Date	Invoice No.	Customer Account Debited	Post. Ref.	Accounts Receivable DR Sales Revenue CR	Cost of Goods Sold DR Merchandise Inventory CR
2016					

Note: Short Exercise SC-4 must be completed before attempting Short Exercise SC-5.

SC-5 Posting transactions from a sales journal to a subsidiary ledger and general ledger

Learning Objective 2

Review your results from Short Exercise SC-4.

Requirements

1. Total each column of the sales journal.
2. Open the following four-column accounts in the accounts receivable subsidiary ledger: Accounts Receivable—Floyd; Accounts Receivable—Jackson; Accounts Receivable—Till; Accounts Receivable—Ward. Post the transactions to the accounts receivable subsidiary ledger.
3. Open the following selected four-column accounts in the general ledger: Accounts Receivable (112); Merchandise Inventory (118), Bal. $5,000; Sales Revenue (411); Cost of Goods Sold (511). Post the total of each column to the general ledger.
4. Balance the total of the customer balances in the accounts receivable subsidiary ledger against Accounts Receivable in the general ledger.

Learning Objective 2

SC-6 Recording transactions in a cash receipts journal

Jul. 5	Sold merchandise inventory for cash, $2,200. Cost of goods, $2,100.
12	Collected interest revenue of $2,350.
18	Received cash from Henry Nord, $1,100, on account. There was no discount.
29	Received $5,400 from Morgan Dexter in full settlement of his account receivable. Dexter earned a $75 discount by paying early.

Use the following cash receipts journal to record the preceding transactions.

Cash Receipts Journal **Page 3**

Date	Account Credited	Post. Ref.	Cash DR	Sales Discounts DR	Accounts Receivable CR	Sales Revenue CR	Other Accounts CR	Cost of Goods Sold DR Merchandise Inventory CR
2016								

Note: Short Exercise SC-6 must be completed before attempting Short Exercise SC-7.

Learning Objective 2

SC-7 Posting transactions from a cash receipts journal to a subsidiary ledger and general ledger

Review your results from Short Exercise SC-6.

Requirements

1. Total each column of the cash receipts journal.
2. Open the following four-column accounts in the accounts receivable subsidiary ledger: Accounts Receivable—Dexter, Bal. $5,475; Accounts Receivable—Nord, Bal. $1,100. Post the transactions to the accounts receivable subsidiary ledger.
3. Open the following selected four-column accounts in the general ledger: Cash (111), Bal. $5,000; Accounts Receivable (112), Bal. $6,575; Merchandise Inventory (118), Bal. $3,000; Sales Revenue (411), Bal. $23,000; Sales Discounts (412); Interest Revenue (419); Cost of Goods Sold (511), Bal. $13,800. Post the total of each column to the general ledger. Also, post the Other Accounts to the general ledger.
4. Balance the total of the customer balances in the accounts receivable subsidiary ledger against Accounts Receivable in the general ledger.

Learning Objective 3

SC-8 Recording transactions in a purchases journal

Oct. 1	Purchased merchandise inventory on account with credit terms of 1/10, n/30 from Milk Co., $2,100.
11	Purchased office supplies on account from Borris Co., $250. Terms were n/EOM.
24	Purchased furniture on account with credit terms of 2/10, n/60 from Slip Co., $1,700.

Use the following purchases journal to record the preceding transactions.

Purchases Journal Page 6

							Other Accounts DR		
Date	Vendor Account Credited	Terms	Post. Ref.	Accounts Payable CR	Merchandise Inventory DR	Office Supplies DR	Account Title	Post Ref.	Amount
2016									

Note: Short Exercise SC-8 must be completed before attempting Short Exercise SC-9.

SC-9 Posting transactions from a purchases journal to a subsidiary ledger and general ledger

Learning Objective 3

Review your results from Short Exercise SC-8.

Requirements

1. Total each column of the purchases journal.
2. Open the following four-column accounts in the accounts payable subsidiary ledger: Accounts Payable—Borris Co.; Accounts Payable—Milk Co.; Accounts Payable—Slip Co. Post the transactions to the accounts payable subsidiary ledger.
3. Open the following selected four-column accounts in the general ledger: Merchandise Inventory (115); Office Supplies (116); Furniture (151); Accounts Payable (211). Post the total of each column to the general ledger. Also, post the Other Accounts to the general ledger.
4. Balance the total of the vendor balances in the accounts payable subsidiary ledger against Accounts Payable in the general ledger.

SC-10 Recording transactions in a cash payments journal

Learning Objective 3

Jan. 5	Issued check no. 430 to purchase equipment for cash, $2,200.
7	Purchased merchandise inventory for cash, $400, issuing check no. 431.
18	Paid King Co. amount owed, $1,025, less $60 discount. Issued check no. 432.
28	Issued check no. 433 to pay utilities, $210. The bill was just received, and there is no liability recorded.

Use the following cash payments journal to record the preceding transactions.

Cash Payments Journal **Page 8**

Date	Ck. No.	Account Debited	Post. Ref.	Other Accounts DR	Accounts Payable DR	Merchandise Inventory CR	Cash CR
2016							

Note: Short Exercise SC-10 must be completed before attempting Short Exercise SC-11.

Learning Objective 3

SC-11 Posting transactions from a cash payments journal to a subsidiary ledger and general ledger

Review your results from Short Exercise SC-10.

Requirements

1. Total each column of the cash payments journal.
2. Open the following four-column accounts in the accounts payable subsidiary ledger: Accounts Payable—King Co., Bal. $1,025. Post the transactions to the accounts payable subsidiary ledger.
3. Open the following selected four-column accounts in the general ledger: Cash (111), Bal. $6,500; Merchandise Inventory (118), $1,800; Equipment (150), $10,000; Accounts Payable (211), $1,025; Utilities Expense (541). Post the total of each column to the general ledger. Also, post the Other Accounts to the general ledger.
4. Balance the total of the vendor balances in the accounts payable subsidiary ledger against Accounts Payable in the general ledger.

Learning Objective 3

SC-12 Recording transactions in a general journal

Mar. 2	Sold merchandise inventory on account to B. Kamp, issuing invoice no. 501 for $1,100 (cost, $1,090).
6	Issued credit memo to B. Kamp for $1,100 for merchandise returned to the business by the customer. Also accounted for receipt of the merchandise inventory at cost.
21	Purchased merchandise inventory on credit terms of 3/10, n/30 from Prompt Co., $800.
28	Returned damaged merchandise inventory to Prompt Co., issuing a debit memo for $800.

Journalize the above transactions that should be recorded in the general journal. If a transaction should not be recorded in the general journal, identify the special journal that should be used. Assume the company uses the perpetual inventory system.

SC-13 Understanding components of a computerized accounting information system

Learning Objective 4

Ned Timmons, engineer, is considering using a computerized accounting system for his professional engineering business. Ned has asked that you help him understand the components of a computerized accounting information system by answering the following questions:

Requirements

1. What are the two basic components of a computerized accounting information system?
2. Provide examples of each component.
3. If Ned were interested in an entry-level software system, what software might you recommend?

> Exercises

EC-14 Recording transactions—sales journal

Learning Objective 2

Accounts Receivable DR, Sales Revenue CR column total $1,825

Feb. 1	Sold merchandise inventory on account to Crisp Co., $1,325. Cost of goods, $870. Invoice no. 401.
6	Sold merchandise inventory for cash, $920 (cost, $660).
12	Collected interest revenue of $140.
15	Received cash from Crisp Co. in full settlement of its account receivable. There was no discount.
20	Sold merchandise inventory on account to Drummer Co., issuing invoice no. 402 for $500 (cost, $425).
22	Sold merchandise inventory for cash, $570 (cost $450).
26	Sold office supplies to an employee for cash of $180.
28	Received $480 from Drummer Co. in full settlement of its account receivable. Drummer earned a discount by paying early. Terms are 4/10, n/15.

Requirements

1. Prepare headings for a sales journal. Journalize the transactions that should be recorded in the sales journal. (Round the sales discount to a whole dollar.) Assume the company uses the perpetual inventory system.
2. Total each column of the sales journal.

EC-15 Recording transactions—cash receipts journal

Learning Objective 2

Accounts Receivable CR column total $1,825

Refer to information in Exercise EC-14.

Requirements

1. Prepare headings for a cash receipts journal. Journalize the transactions that should be recorded in the cash receipts journal.
2. Total each column of the cash receipts journal.

Learning Objective 2

EC-16 Using the sales and cash receipts journals

The sales and cash receipts journals of Reynolds Office Products include the following entries:

Sales Journal **Page 1**

Date	Invoice No.	Customer Account Debited	Post. Ref.	Accounts Receivable DR Sales Revenue CR	Cost of Goods Sold DR Merchandise Inventory CR
2016					
May 7	601	L. Ellen	✓	145	66
10	602	T. Rex	✓	90	34
10	603	E. Lease	✓	55	43
12	604	B. Gee	✓	170	75
May 31		Total		460	218

Cash Receipts Journal **Page 5**

Date	Account Credited	Post. Ref.	Cash DR	Sales Discounts DR	Accounts Receivable CR	Sales Revenue CR	Other Accounts CR	Cost of Goods Sold DR Merchandise Inventory CR
2016								
May 16	L. Ellen	✓						
19	E. Lease	✓						
24			350			350		230
30	T. Rex	✓						
May 31	Total							

Identify the missing information in the cash receipts journal for those transactions listed. There are no sales discounts. Also, total the columns in the cash receipts journal and show that total debits equal total credits.

Learning Objective 2

EC-17 Analyzing postings from the cash receipts journal

The cash receipts journal of Silver Plastics follows.

Cash Receipts Journal **Page 7**

Date	Account Credited	Post. Ref.	Cash DR	Sales Discounts DR	Accounts Receivable CR	Sales Revenue CR	Other Accounts CR	Cost of Goods Sold DR Merchandise Inventory CR
2016								
Jan. 2	Apple, Corp.	*(g)*	790	20	810			
9	Karen, Inc.	*(h)*	490		490			
19	Note Receivable	*(i)*	4,480				4,000	
	Interest Revenue	*(j)*					480	
30	J. T. Fritz	*(k)*	310	10	320			
31			4,230			4,230		3,500
Jan. 31	Total		10,300	30	1,620	4,230	4,480	3,500
			(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*

Silver's general ledger includes the following selected accounts, along with their account numbers:

Number	Account	Number	Account
110	Cash	510	Sales Revenue
115	Accounts Receivable	512	Sales Discounts
118	Merchandise Inventory	520	Interest Revenue
125	Notes Receivable	611	Cost of Goods Sold

Indicate whether each posting reference (a) through (k) should be a

- Check mark (✓) for a posting to a customer account in the accounts receivable subsidiary ledger.
- Account number for a posting to an account in the general ledger. If so, give the account number.
- Letter (X) for an amount not posted.

EC-18 Identifying transactions in the accounts receivable subsidiary ledger

Learning Objective 2

A customer account in the accounts receivable subsidiary ledger of Landon Old Company follows.

JACOB WAITS

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Nov. 1				400	
9	S.5	1,180		1,580	
18	J.8		190	1,390	
30	CR.9		700	690	

Describe the three posted transactions.

EC-19 Recording transactions—purchases journal

Learning Objective 3

Accounts Payable CR column total $4,300

Apr. 2	Purchased merchandise inventory on credit terms of 3/10, n/60 from Viking Co., $2,800.
5	Issued check no. 820 to purchase equipment for cash, $3,100.
11	Purchased merchandise inventory for cash, $500, issuing check no. 821.
12	Issued check no. 822 to pay Viking Co. net amount owed from Apr. 2.
19	Purchased office supplies on account from Danvers Supplies, $300. Terms were n/EOM.
24	Purchased merchandise inventory on credit terms of net 30 from Westchester Sales, $1,200.
28	Issued check no. 823 to pay for insurance coverage, debiting Prepaid Insurance for $1,600.
29	Issued check no. 824 to pay rent for the month, $1,700.

Requirements

1. Prepare headings for a purchases journal. Journalize the transactions that should be recorded in the purchases journal. The company uses the perpetual inventory system.
2. Total each column of the purchases journal.

Learning Objective 3

Cash CR column total $9,616

EC-20 Recording transactions—cash payments journal

Refer to information in Exercise EC-19.

Requirements

1. Prepare headings for a cash payments journal. Journalize the transactions that should be recorded in the cash payments journal.
2. Total each column of the cash payments journal.

Learning Objective 3

Merchandise Inventory DR column total $2,285

EC-21 Posting from the purchases journal; balancing the ledgers

The purchases journal of NorthEastern Publishing Company follows.

Purchases Journal **Page 7**

							Other Accounts DR		
Date	Vendor Account Credited	Terms	Post. Ref.	Accounts Payable CR	Merchandise Inventory DR	Office Supplies DR	Account Title	Post. Ref.	Amount
2016									
Sep. 2	Last Tech	n/30		825	825				
5	Jump Supply	n/30		165		165			
13	Last Tech	4/10, n/30		1,460	1,460				
26	Farrell Equipment	n/30		910			Equipment		910
Sep. 30	Total								

Requirements

1. Total each column of the purchases journal.
2. Open four-column ledger accounts for Merchandise Inventory (118), Office Supplies (120), Equipment (150), and Accounts Payable (211). Post to these accounts from the purchases journal. Use dates and posting references in the accounts.
3. Open four-column accounts in the accounts payable subsidiary ledger for Farrell Equipment, Jump Supply, and Last Tech. Post from the purchases journal. Use dates and posting references in the ledger accounts.
4. Balance the Accounts Payable control account in the general ledger with the total of the balances in the accounts payable subsidiary ledger.

Learning Objective 3

EC-22 Identifying transactions in the accounts payable subsidiary ledger

A vendor account in the accounts payable subsidiary ledger of Frank Company follows.

LESLIE CARTER

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Dec. 1					1,800
12	P.4		2,340		4,140
20	J.10	200			3,940
29	CP.6	1,500			2,440

Describe the three posted transactions.

EC-23 Identifying errors in special journals

Learning Objectives 2, 3

Transaction	Recording
a. Henry Associates paid $490 on account for an earlier purchase of merchandise inventory.	Purchases journal
b. Recorded depreciation expense for the month.	Cash payments journal
c. Collected interest revenue.	Cash receipts journal
d. Sold merchandise inventory on account.	Cash receipts journal
e. Issued check no. 535 for purchase of merchandise inventory.	Purchases journal
f. Returned damaged inventory that was purchased on account.	Purchases journal
g. Sold merchandise inventory for cash.	Sales journal

For each transaction listed, identify the recording error and indicate the journal that should have been used.

> Problems Group A

All problems can be completed manually or by using either MyAccountingLab General Ledger or QuickBooks.

PC-24A Using the sales, cash receipts, and general journals

Learning Objectives 2, 3, 4

Cash Receipts Journal, Accounts Receivable CR column total $12,800

Assume Smiling Springs Glass Company uses the perpetual inventory system. The general ledger of Smiling Springs Glass Company includes the following selected accounts, along with their account numbers:

Number	Account	Number	Account
11	Cash	19	Land
12	Accounts Receivable	41	Sales Revenue
13	Notes Receivable	42	Sales Discounts
15	Merchandise Inventory	43	Sales Returns and Allowances
16	Office Supplies	51	Cost of Goods Sold
18	Equipment		

All credit sales are on Smiling Springs's standard terms of 2/10, n/30. Sales and cash receipts transactions in July were as follows:

Jul. 2	Sold merchandise inventory on credit to Intelysis, Inc., $1,700. Smiling Springs's cost of these goods was $200.
3	As an accommodation to a competitor, sold office supplies at cost, $60, receiving cash.
7	Cash sales for the week totaled $2,000 (cost, $1,500).
9	Sold merchandise inventory on account to A. B. Moore, $7,500 (cost, $5,400).
10	Sold land that cost $8,000 for cash of the same amount.
11	Sold merchandise inventory on account to Smart Electric, $5,800 (cost, $3,250).
12	Received cash from Intelysis in full settlement of its account receivable from July 2.
14	Cash sales for the week were $2,500 (cost, $1,700).
15	Sold merchandise inventory on credit to the partnership of West & Bob, $3,900 (cost, $2,350).
18	Received merchandise inventory sold on July 9 to A. B. Moore for $300. The goods shipped were unsatisfactory. These goods cost Smiling Springs $200.
20	Sold merchandise inventory on account to Smart Electric, $650 (cost, $350).
21	Cash sales for the week were $900 (cost, $650).
22	Received $4,000 cash from A. B. Moore in partial settlement of his account receivable. There was no discount.
25	Received cash from West & Bob for its account receivable from July 15.
25	Sold merchandise inventory on account to Oggie Co., $1,590 (cost, $960).
27	Collected $5,600 on a note receivable. There was no interest earned.
28	Cash sales for the week totaled $3,790 (cost, $2,460).
29	Sold merchandise inventory on account to R. O. Bankston, $200 (cost, $120).
30	Received merchandise inventory sold on July 25 to Oggie Co. for $40. The cost of these goods was $10.
31	Received $3,200 cash on account from A. B. Moore.

Requirements

1. Use the appropriate journal to record the preceding transactions in a sales journal (omit the Invoice No. column), a cash receipts journal, and a general journal. Smiling Springs Glass Company records sales returns and allowances in the general journal.
2. Total each column of the sales journal and the cash receipts journal. Show that total debits equal total credits.
3. Show how postings would be made by writing the account numbers and check marks in the appropriate places in the journals.

Learning Objectives 3, 4

Purchases Journal, Accounts Payable CR column total $20,350

PC-25A Using the purchases, cash payments, and general journals

The general ledger of Sparkling Lake Golf Shop includes the following selected accounts, along with their account numbers:

Number	Account	Number	Account
111	Cash	181	Equipment
131	Merchandise Inventory	211	Accounts Payable
161	Prepaid Insurance	564	Rent Expense
171	Office Supplies	583	Utilities Expense

Transactions in December that affected purchases and cash payments follow:

Dec. 2	Purchased merchandise inventory on credit from Tighe, $4,300. Terms were 1/10, n/30.
3	Paid monthly rent, debiting Rent Expense for $2,200.
5	Purchased office supplies on credit terms of 1/10, n/30 from Ready Supply, $450.
8	Received and paid electricity utility bill, $570.
9	Purchased equipment on account from Avery Equipment, $6,800. Payment terms were net 30.
10	Returned the equipment to Avery Equipment. It was damaged.
11	Paid Tighe the amount owed on the purchase of December 2.
12	Purchased merchandise inventory on account from Crystal Golf, $4,500. Terms were 2/10, n/30.
13	Purchased merchandise inventory for cash, $610.
14	Paid a semiannual insurance premium, debiting Prepaid Insurance, $1,000.
16	Paid its account payable to Ready Supply from December 5.
18	Received and paid gas and water utility bills, $100.
21	Purchased merchandise inventory on credit terms of 3/10, n/45 from Darling, Inc., $3,800.
21	Paid its account payable to Crystal Golf from December 12.
22	Purchased office supplies on account from Office Stuff, Inc., $500. Terms were net 30.
26	Returned to Darling, Inc. $900 of the merchandise inventory purchased on December 21.
31	Paid Darling, Inc. the net amount owed from December 21 less the return on December 26.

Requirements

1. Sparkling Lake Golf Shop records purchase returns in the general journal. Use the appropriate journal to record the transactions in a purchases journal, a cash payments journal (omit the Check No. column), and a general journal. The company uses the perpetual inventory system.
2. Total each column of the special journals. Show that total debits equal total credits in each special journal.
3. Show how postings would be made from the journals by writing the account numbers and check marks in the appropriate places in the journals.

Learning Objectives 2, 3, 4

Trial balance, total debits $51,000

PC-26A Using all journals, posting, and balancing the ledgers

Oxford Computer Security uses the perpetual inventory system and makes all credit sales on terms of 2/10, n/30. Oxford completed the following transactions during May:

May 2	Issued invoice no. 913 for sale on account to K. D. Kerwin, $2,900. Oxford's cost of this merchandise inventory was $1,400.
3	Purchased merchandise inventory on credit terms of 3/10, n/60 from Habile Co., $2,800.
5	Sold merchandise inventory for cash, $1,500 (cost, $650).
5	Issued check no. 532 to purchase furniture for cash, $2,550.
8	Collected interest revenue of $1,450.
9	Issued invoice no. 914 for sale on account to Burleson Co., $5,400 (cost, $2,600).
10	Purchased merchandise inventory for cash, $1,250, issuing check no. 533.
12	Received cash from K. D. Kerwin in full settlement of her account receivable from the sale on May 2.
13	Issued check no. 534 to pay Habile Co. the net amount owed from May 3. Round to the nearest dollar.
13	Purchased office supplies on account from Marszalek, Inc., $400. Terms were n/EOM.
15	Sold merchandise inventory on account to M. O. Samson, issuing invoice no. 915 for $900 (cost, $300).
17	Issued credit memo to M. O. Samson for $900 for merchandise inventory returned by Samson. Also accounted for receipt of the merchandise inventory at cost.
18	Issued invoice no. 916 for credit sale to K. D. Kerwin, $600 (cost, $100).
19	Received $5,292 from Burleson Co. in full settlement of its account receivable from May 9. Burleson earned a discount by paying early.
20	Purchased merchandise inventory on credit terms of net 30 from Saari Distributing, $2,350.
22	Purchased furniture on credit terms of 3/10, n/60 from Habile Co., $600.
22	Issued check no. 535 to pay for insurance coverage, debiting Prepaid Insurance for $1,100.
24	Sold office supplies to an employee for cash of $75, which was Oxford's cost.
25	Received bill and issued check no. 536 to pay utilities, $300.
28	Purchased merchandise inventory on credit terms of 2/10, n/30 from Marszalek, Inc., $600.
29	Returned damaged merchandise inventory to Marszalek, Inc., issuing a debit memo for $600.
29	Sold merchandise inventory on account to Burleson Co., issuing invoice no. 917 for $3,300 (cost, $1,200).
30	Issued check no. 537 to pay Marszalek, Inc. in full for May 13 purchase.
31	Received cash in full from K. D. Kerwin on credit sale of May 18. There was no discount.
31	Issued check no. 538 to pay monthly salaries of $2,050.

Requirements

1. Open four-column general ledger accounts using Oxford's account numbers and balances as of May 1, 2016, that follow. All accounts have normal balances.

Number	Account	Bal.
111	Cash	$ 15,400
112	Accounts Receivable	1,400
114	Merchandise Inventory	6,700
116	Office Supplies	700
117	Prepaid Insurance	0
151	Furniture	2,700
211	Accounts Payable	1,000
311	Common Stock	19,000
314	Retained Earnings	3,400
411	Sales Revenue	7,500
412	Sales Discounts	0
413	Sales Returns and Allowances	0
419	Interest Revenue	1,100
511	Cost of Goods Sold	2,900
531	Salaries Expense	1,700
541	Utilities Expense	500

2. Open four-column accounts in the subsidiary ledgers with beginning balances as of May 1, if any: Accounts receivable subsidiary ledger—Backus Co., $1,400; Burleson Co., $0; M. O. Samson, $0; and K. D. Kerwin, $0. Accounts payable subsidiary ledger—Habile Co., $0; Marszalek, Inc., $0; Saari Distributing, $0; Weaver Co., $1,000.
3. Enter the transactions in a sales journal (page 7), a cash receipts journal (page 5), a purchases journal (page 10), a cash payments journal (page 8), and a general journal (page 6), as appropriate.
4. Post daily to the accounts receivable subsidiary ledger and to the accounts payable subsidiary ledger.
5. Total each column of the special journals. Show that total debits equal total credits in each special journal. On May 31, post to the general ledger.
6. Prepare a trial balance as of May 31, 2016, to verify the equality of the general ledger. Balance the total of the customer account balances in the accounts receivable subsidiary ledger against Accounts Receivable in the general ledger. Do the same for the accounts payable subsidiary ledger and Accounts Payable in the general ledger.

> Problems Group B

All problems can be completed manually or by using either MyAccountingLab General Ledger or QuickBooks.

Learning Objectives 2, 3, 4

Cash Receipts Journal, Accounts Receivable CR column total $12,800

PC-27B Using the sales, cash receipts, and general journals

Assume Brilliant Spring Company uses the perpetual inventory system. The general ledger of Brilliant Springs Company includes the following selected accounts, along with their account numbers:

Number	Account	Number	Account
11	Cash	19	Land
12	Accounts Receivable	41	Sales Revenue
13	Notes Receivable	42	Sales Discounts
15	Merchandise Inventory	43	Sales Returns and Allowances
16	Office Supplies	51	Cost of Goods Sold
18	Equipment		

All credit sales are on Brilliant's standard terms of 2/10, n/30. Sales and cash receipts transactions in November were as follows:

Nov. 2	Sold merchandise inventory on credit to Image, Inc., $2,200. Brilliant's cost of these goods was $200.
6	As an accommodation to another company, sold new equipment for its cost of $85, receiving cash for this amount.
6	Cash sales for the week totaled $2,300 (cost, $1,500).
8	Sold merchandise inventory to A. Z. Metz on account, $7,500 (cost, $5,300).
9	Sold land that cost $9,000 for cash of $9,000.
11	Sold merchandise inventory on account to Speedy Electric, $5,800 (cost, $3,250).
11	Received cash from Image in full settlement of its account receivable from November 2.
13	Cash sales for the week were $2,400 (cost, $1,400).
15	Sold merchandise inventory on credit to Wilkson and Miller, $3,600 (cost, $2,300).
18	Received merchandise inventory from A. Z. Metz as a sales return, $500. The goods shipped were unsatisfactory. These goods cost Brilliant $100.
19	Sold merchandise inventory to Speedy Electric on account, $850 (cost, $350).
20	Cash sales for the week were $950 (cost, $620).
21	Received $4,400 cash from A. Z. Metz in partial settlement of its account receivable. There was no discount.
22	Received cash from Wilkson and Miller for its account receivable from November 15.
22	Sold merchandise inventory on account to Oliver Co., $1,530 (cost, $980).
25	Collected $5,000 on a note receivable. There was no interest earned.
27	Cash sales for the week totaled $3,740 (cost, $2,460).
27	Sold merchandise inventory on account to R. A. Banks, $210 (cost, $160).
28	Received merchandise inventory from Oliver Co. as a sales return, $90. The cost of these goods was $60.
30	Received $2,600 cash on account from A. Z. Metz. There was no discount.

Requirements

1. Use the appropriate journal to record the preceding transactions in a sales journal (omit the Invoice No. column), a cash receipts journal, and a general journal. Record sales returns and allowances in the general journal.
2. Total each column of the sales journal and the cash receipts journal. Determine that total debits equal total credits.
3. Show how postings would be made from the journals by writing the account numbers and check marks in the appropriate places in the journals.

PC-28B Using the purchases, cash payments, and general journals

Learning Objectives 3, 4

Purchases Journal, Accounts Payable CR column total $18,750

The general ledger of Circus Lake Golf Shop includes the following selected accounts, along with their account numbers:

Number	Account	Number	Account
111	Cash	181	Equipment
131	Merchandise Inventory	211	Accounts Payable
161	Prepaid Insurance	564	Rent Expense
171	Office Supplies	583	Utilities Expense

Transactions in December that affected purchases and cash payments were as follows:

Dec. 2	Purchased merchandise inventory on credit from Trudel, $4,200. Terms were 3/10, n/30.
3	Paid monthly rent, debiting Rent Expense for $2,200.
5	Purchased office supplies on credit terms of 3/10, n/30 from Rapid Supply, $450.
8	Received and paid electricity utility bill, $530.
9	Purchased equipment on account from Alright Equipment, $6,200. Payment terms were net 30.
10	Returned the equipment to Alright Equipment. It was damaged.
11	Paid Trudel the amount owed on the purchase of December 2.
12	Purchased merchandise inventory on account from Callahan Golf, $4,500. Terms were 2/10, n/30.
13	Purchased merchandise inventory for cash, $640.
14	Paid a semiannual insurance premium, debiting Prepaid Insurance, $1,300.
16	Paid its account payable to Rapid Supply from December 5.
18	Received and paid gas and water utility bills, $700.
21	Purchased merchandise inventory on credit terms of 2/10, n/45 from Dunnstable, Inc., $3,100.
21	Paid its account payable to Callahan Golf from December 12.
22	Purchased office supplies on account from Office Space, Inc., $300. Terms were net 30.
26	Returned to Dunnstable, Inc. $1,300 of the merchandise inventory purchased on December 21.
31	Paid Dunnstable, Inc. the net amount owed from December 21 less the return on December 26.

Requirements

1. Use the appropriate journal to record the preceding transactions in a purchases journal, a cash payments journal (omit the Check No. column), and a general journal. Circus Lake Golf Shop records purchase returns in the general journal. The company uses the perpetual inventory system.
2. Total each column of the special journals. Show that total debits equal total credits in each special journal.
3. Show how postings would be made from the journals by writing the account numbers and check marks in the appropriate places in the journals.

Learning Objectives 2, 3, 4

Trial balance, total debits $49,400

PC-29B Using all journals, posting, and balancing the ledgers

Kingston Computer Security uses the perpetual inventory system and makes all credit sales on terms of 2/10, n/30. During March, Kingston completed these transactions:

Mar. 2	Issued invoice no. 191 for sale on account to L. E. Kaeding, $3,200. Kingston's cost of this merchandise inventory was $1,000.
3	Purchased merchandise inventory on credit terms of 3/10, n/60 from Heard, $3,100.
4	Sold merchandise inventory for cash, $1,000 (cost, $550).
5	Issued check no. 473 to purchase furniture for cash $2,650.
8	Collected interest revenue of $1,250.
9	Issued invoice no. 192 for sale on account to Cantu Co., $5,700 (cost, $2,600).
10	Purchased merchandise inventory for cash, $1,150, issuing check no. 474.
12	Received cash from L. E. Kaeding in full settlement of her account receivable, net of the discount, from the sale of March 2.
13	Issued check no. 475 to pay Heard net amount owed from March 3. Round to the nearest dollar.
13	Purchased office supplies on account from Marston Corp., $500. Terms were n/EOM.
15	Sold merchandise inventory on account to Stenback Co., issuing invoice no. 193 for $650 (cost, $250).
17	Issued credit memo to Stenback for $650 for defective merchandise inventory returned by Stenback. Also accounted for receipt of the merchandise inventory at cost.
18	Issued invoice no. 194 for credit sale to L. E. Kaeding, $400 (cost, $100).
19	Received $5,586 from Cantu Co. in full settlement of its account receivable from March 9. Cantu earned a discount by paying early.
20	Purchased merchandise inventory on credit terms of net 30 from James Sales, $2,000.
22	Purchased furniture on credit terms of 3/10, n/60 from Heard, $800.
22	Issued check no. 476 to pay for insurance coverage, debiting Prepaid Insurance for $1,300.
24	Sold office supplies to an employee for cash of $125, which was Kingston's cost.
25	Received bill and issued check no. 477 to pay utilities, $650.
28	Purchased merchandise inventory on credit terms of 2/10, n/30 from Marston Corp., $700.
29	Returned damaged merchandise inventory to Marston Corp., issuing a debit memo for $700.
29	Sold merchandise inventory on account to Cantu Co., issuing invoice no. 195 for $3,400 (cost, $1,100).
30	Issued check no. 478 to pay Marston Corp. in full for March 13 purchase.
31	Received cash in full from L. E. Kaeding on credit sale of March 18. There was no discount.
31	Issued check no. 479 to pay monthly salaries of $1,850.

Requirements

1. Open four-column general ledger accounts using Kingston Computer Security's account numbers and balances as of March 1, 2016, that follow. All accounts have normal balances.

Number	Account	Bal.
111	Cash	$ 15,200
112	Accounts Receivable	2,000
114	Merchandise Inventory	6,000
116	Office Supplies	900
117	Prepaid Insurance	0
151	Furniture	2,200
211	Accounts Payable	1,000
311	Common Stock	19,000
314	Retained Earnings	2,500
411	Sales Revenue	7,800
412	Sales Discounts	0
413	Sales Returns and Allowances	0
419	Interest Revenue	700
511	Cost of Goods Sold	2,400
531	Salaries Expense	1,700
541	Utilities Expense	600

2. Open four-column accounts in the subsidiary ledgers with beginning balances as of March 1, if any. Accounts receivable subsidiary ledger: Abney Co., $2,000; Cantu Co., $0; L. E. Kaeding, $0; and Stenback, $0. Accounts payable subsidiary ledger: Heard, $0; Marston Corp, $0; James Sales, $0; and Yount Co., $1,000.
3. Enter the transactions in a sales journal (page 8), a cash receipts journal (page 3), a purchases journal (page 6), a cash payments journal (page 9), and a general journal (page 4), as appropriate.
4. Post daily to the accounts receivable subsidiary ledger and to the accounts payable subsidiary ledger.
5. Total each column of the special journals. Show that total debits equal total credits in each special journal. On March 31, post to the general ledger.
6. Prepare a trial balance as of March 31, 2016, to verify the equality of the general ledger. Balance the total of the customer account balances in the accounts receivable subsidiary ledger against Accounts Receivable in the general ledger. Do the same for the accounts payable subsidiary ledger and Accounts Payable in the general ledger.

> Continuing Problem

PC-30 Using all journals

This problem continues the Daniels Consulting situation. Daniels Consulting performs systems consulting. Daniels has also begun selling accounting software and uses the perpetual inventory system to account for software inventory. During January 2017, Daniels completed the following transactions:

Jan. 2	Completed a consulting engagement and received cash of $5,700.
2	Prepaid three months office rent, $2,400.
7	Purchased 50 units software inventory on account from Miller Co., $1,050, plus freight in, $50.
18	Sold 40 software units on account to Jason Needle, $2,625 (cost, $880).
19	Consulted with a client, Louis Frank, for a fee of $2,500 on account. (Use general journal.)
20	Paid employee salaries, $1,885, which includes accrued salaries from December of $685.
21	Paid Miller Co. on account, $1,100. There was no discount.
22	Purchased 185 units software inventory on account from Whitestone Co., $4,810.
24	Received bill and paid utilities, $375.
28	Sold 135 units software for cash, $5,265 (cost, $3,470).
31	Recorded the following adjusting entries: a. Accrued salaries expense, $775 b. Depreciation on Equipment, $60; Depreciation on Furniture, $50 c. Expiration of prepaid rent, $800 d. Physical count of software inventory, 50 units, $1,300

Daniels Consulting had the following selected accounts with account numbers and normal balances:

Number	Account	Balances
111	Cash	$ 17,950
112	Accounts Receivable	3,600
114	Software Inventory	0
116	Office Supplies	300
117	Prepaid Rent	0
170	Equipment	3,600
171	Accumulated Depreciation—Equipment	60
180	Furniture	3,000
181	Accumulated Depreciation—Furniture	50
211	Accounts Payable	3,600
212	Unearned Revenue	1,800
213	Salaries Payable	685
311	Common Stock	20,000
314	Retained Earnings	2,255
411	Sales Revenue	0
412	Sales Discounts	0
419	Service Revenue	0
511	Cost of Goods Sold	0
531	Salaries Expense	0
541	Utilities Expense	0
551	Depreciation Expense—Equipment	0
561	Depreciation Expense—Furniture	0
571	Rent Expense	0

Requirements

1. Use the appropriate journal to record the preceding transactions in a sales journal (omit the Invoice No. column), a cash receipts journal, a purchases journal, a cash payments journal (omit the Check No. column), and a general journal.
2. Total each column of the special journals. Show that total debits equal total credits in each special journal.
3. Show how postings would be made from the journals by writing the account numbers and check marks in the appropriate places in the journals.

> Practice Set

PC-31 Using all journals

This problem continues the Crystal Clear Cleaning problem. Crystal Clear Cleaning has decided that, in addition to providing cleaning services, it will sell cleaning products. Crystal Clear uses the perpetual inventory system. During December 2017, Crystal Clear completed the following transactions:

Dec. 2	Purchased 475 units of inventory for $2,850 on account from Sparkle, Co. on terms 3/10, n/20.
5	Purchased 600 units of inventory from Borax on account with terms 2/10, n/30. The total invoice was for $4,500, which included a $150 freight charge.
7	Returned 75 units of inventory to Sparkle from the December 2 purchase (cost, $450).
9	Paid Borax.
11	Sold 285 units of goods to Happy Maids for $3,990 on account on terms 3/10, n/30. Crystal Clear's cost of the goods was $1,710.
12	Paid Sparkle.
15	Received 22 units with a retail price of $308 of goods back from customer Happy Maids. The goods cost Crystal Clear $132.
21	Received payment from Happy Maids, settling the amount due in full.
28	Sold 265 units of goods to Bridget, Inc. for cash of $3,975 (cost, $1,691).
29	Received bill and paid cash for utilities of $415.
30	Paid cash for Sales Commission Expense of $550.
31	Recorded the following adjusting entries: a. Physical count of inventory on December 31 showed 428 units of goods on hand, $3,148 b. Depreciation, $270 c. Accrued salaries expense of $725 d. Prepared all other adjustments necessary for December. (Hint: You will need to review the adjustment information in Chapter 3 to determine the remaining adjustments.) Assume cleaning supplies at December 31 are $30.

Crystal Clear Cleaning had the following selected accounts with account numbers and normal balances:

Number	Account	Balance
111	Cash	$ 138,150
112	Accounts Receivable	2,600
114	Merchandise Inventory	0
116	Cleaning Supplies	30
117	Prepaid Rent	1,500
118	Prepaid Insurance	1,650
160	Equipment	3,200
170	Truck	7,000
171	Accumulated Depreciation	270
211	Accounts Payable	1,470
212	Salaries Payable	0
213	Unearned Revenue	11,500
214	Interest Payable	240
216	Notes Payable	96,000
311	Common Stock	42,000
312	Retained Earnings	2,650
411	Sales Revenue	0
412	Sales Discounts	0
413	Sales Returns and Allowances	0
419	Service Revenue	0
511	Cost of Goods Sold	0
531	Salaries Expense	0
541	Utilities Expense	0
551	Depreciation Expense	0
561	Insurance Expense	0
571	Rent Expense	0
581	Sales Commission Expense	0
591	Interest Expense	0

Requirements

1. Use the appropriate journal to record the preceding transactions in a sales journal (omit the Invoice No. column), a cash receipts journal, a purchases journal, a cash payments journal (omit the Check No. column), and a general journal.
2. Total each column of the special journals. Show that total debits equal total credits in each special journal.
3. Show how postings would be made from the journals by writing the account numbers and check marks in the appropriate places in the journals.

COMPREHENSIVE PROBLEM

> Comprehensive Problem for Appendix C

Completing the Accounting Cycle for a Merchandising Entity—Using Special Journals

Quick Networking Systems adjusts and closes its books and then prepares financial statements monthly. Quick uses the perpetual inventory system. The company completed the following transactions during August:

Aug. 1	Issued check no. 682 for August office rent of $2,000.
2	Issued check no. 683 to pay the salaries payable of $1,250 from July 31.
2	Issued invoice no. 503 for sale on account to R. T. Lowe, $600. Quick's cost of this merchandise inventory was $190.
3	Purchased merchandise inventory on credit terms of 1/15, n/60 from Goodman, Inc., $1,400.
4	Received net amount of cash on account from Finnish Company, $2,156, within the discount period.
4	Sold merchandise inventory for cash, $330 (cost, $104).
5	Received from Parkland, Inc. merchandise inventory that had been sold earlier for $550 (cost, $174).
5	Issued check no. 684 to purchase office supplies for cash, $780.
7	Issued invoice no. 504 for sale on account to K. D. Statesman, $2,400 (cost, $759).
8	Issued check no. 685 to pay French Company $2,600 of the amount owed at July 31. This payment occurred after the end of the discount period.
11	Issued check no. 686 to pay Goodman, Inc. the net amount owed from August 3.
12	Received cash from R. T. Lowe in full settlement of her account receivable from August 2.
16	Issued check no. 687 to pay salaries expense of $1,240.
19	Purchased merchandise inventory for cash, $850, issuing check no. 688.
22	Purchased furniture on credit terms of 3/15, n/60 from Boxman Corporation, $510.
23	Sold merchandise inventory on account to Finnish Company, issuing invoice no. 505 for $9,966 (cost, $3,152).
24	Received half the July 31 amount receivable from K. D. Statesman—after the end of the discount period.
26	Purchased office supplies on credit terms of 2/10, n/30 from French Company, $180.
30	Returned damaged merchandise inventory to the company from whom Quick made the cash purchase on August 19, receiving cash of $850.
31	Purchased merchandise inventory on credit terms of 1/10, n/30 from Sammy Supply, $8,330.
31	Issued check no. 689 to stockholders, for dividends, $500.

Requirements

1. Open these four-column accounts with their account numbers and July 31 balances in the various ledgers.

General Ledger:

Nbr.	Account Name	Debit	Credit
101	Cash	$ 4,490	
102	Accounts Receivable	22,560	
105	Merchandise Inventory	41,800	
109	Office Supplies	1,340	
117	Prepaid Insurance	2,200	
160	Furniture	37,270	
161	Accumulated Depreciation—Furniture		$ 10,550
201	Accounts Payable		12,600
204	Salaries Payable		1,250
220	Note Payable, Long-term		31,000
301	Common Stock		25,000
305	Retained Earnings		29,260
310	Dividends		
400	Income Summary		
401	Sales Revenue		
402	Sales Discounts		
403	Sales Returns and Allowances		
501	Cost of Goods Sold		
510	Salaries Expense		
513	Rent Expense		
514	Depreciation Expense—Furniture		
516	Insurance Expense		
519	Supplies Expense		

Accounts Receivable Subsidiary Ledger: Finnish Company $2,200; R. T. Lowe, $0; Parkland, Inc., $11,590; K. D. Statesman, $8,770.

Accounts Payable Subsidiary Ledger: Boxman Corporation, $0; French Company, $12,600; Goodman, Inc., $0; Sammy Supply, $0.

2. Journalize the August transactions using a sales journal (page 4), a cash receipts journal (page 11), a purchases journal (page 8), a cash payments journal (page 5), and a general journal (page 9). Quick makes all credit sales on terms of 2/10, n/30.
3. Post daily to the accounts receivable subsidiary ledger and the accounts payable subsidiary ledger. On August 31, post to the general ledger.

4. Prepare an unadjusted trial balance for the month ended August 31.
5. Journalize and post the following adjusting entries:
   - **a.** Office supplies on hand, $990.
   - **b.** Prepaid insurance expired, $550.
   - **c.** Depreciation expense, $230.
   - **d.** Accrued salaries expense, $1,030.
6. Prepare an adjusted trial balance.
7. Prepare a multistep income statement, statement of retained earnings, and classified balance sheet.
8. Journalize closing entries and post.
9. Prepare a post-closing trial balance.

CRITICAL THINKING

> Decision Case C-1

A fire destroyed certain accounting records of Green Books. The controller, Marilyn Green, asks your help in reconstructing the records. All of the sales are on account, with credit terms of 2/10, n/30. All cash receipts on account reached the store within the 10-day discount period, except as noted. The only accounting record preserved from the fire is the accounts receivable subsidiary ledger, which follows.

Garcia Sales

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Apr. 1				450	
3	CR.8		450	0	
25	S.6	3,600		3,600	
29	S.6	1,100		4,700	

Leewright, Inc.

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Apr. 1				2,800	
15	S.6	2,600		5,400	
29	CR.8		1,500*	3,900	

*Cash receipt did not occur within the discount period.

Sally Jones

				Balance	
Date	**Post. Ref.**	**Debit**	**Credit**	**Debit**	**Credit**
Apr. 1				1,100	
5	CR.8		1,100	0	
11	S.6	400		400	
21	CR.8		400	0	
24	S.6	2,000		2,000	

Jacques LeHavre

				Balance	
Date	Post. Ref.	Debit	Credit	Debit	Credit
Apr. 1				0	
8	S.6	2,400		2,400	
16	S.6	900		3,300	
18	CR.8		2,400	900	
19	J.5		200	700	
27	CR.8		700	0	

Requirements

1. Determine the beginning and ending balances of Accounts Receivable.
2. Determine the sales on account in the month of April.
3. Determine total cash receipts on account from customers during April.

> Fraud Case C-1

Didrikson Rubin, the auditor of Red Barn Farm Equipment, was verifying cash payments to vendors for the past several months. She noticed that several checks had been paid to a specific vendor, but she couldn't find a record of the transactions in the computerized system. Didrikson suspects that an employee is issuing checks to a fictitious "vendor" and then deleting the transactions from the computerized system. How might Didrikson investigate the suspected fraud?

> Team Project C-1

Ace Moving is considering investing in an entry-level computerized accounting information system. Ace needs a system that can record customer invoices and cash receipts. In addition, it would like to track all of its bills and cash payments. As a team, investigate the two common entry-level accounting software products: QuickBooks and Sage 50 Accounting. Prepare a PowerPoint presentation that summarizes the similarities and differences between the two software systems.

> Communication Activity C-1

In 150 words or fewer, explain what an accounting information system is and describe an effective system.

> Quick Check Answers

1. c **2.** a **3.** b **4.** c **5.** b **6.** c **7.** a **8.** a **9.** d

Glossary

The following glossary is for Horngren's Financial & Management Accounting, *The Financial Chapters* 5/e and *Horngren's Financial & Managerial Accounting*, The Managerial Chapters, 5/E".

Absorption Costing. The product costing method that assigns direct materials, direct labor, variable manufacturing overhead, and fixed manufacturing overhead to products. Required by GAAP for external reporting.

Accelerated Depreciation Method. A depreciation method that expenses more of the asset's cost near the start of its useful life and less at the end of its useful life.

Account. A detailed record of all increases and decreases that have occurred in an individual asset, liability, or equity during a specific period.

Accounting. The information system that measures business activities, processes the information into reports, and communicates the results to decision makers.

Accounting Cycle. The process by which companies produce their financial statements for a specific period.

Accounting Equation. The basic tool of accounting, measuring the resources of the business (what the business owns or has control of) and the claims to those resources (what the business owes to creditors and to the owners). Assets = Liabilities + Equity.

Accounting Information System (AIS). A system that collects, records, stores, and processes accounting data to produce information that is useful for decision makers.

Accounting Rate of Return (ARR). A capital investment analysis method that measures the profitability of an investment. Average annual operating income / Average amount invested.

Account Number. On a check, the number that identifies the account upon which the payment is drawn.

Accounts Payable. A short-term liability that will be paid in the future.

Accounts Payable Subsidiary Ledger. A subsidiary ledger that includes an accounts payable account for each vendor that contains detailed information such as the amount purchased, paid, and owed.

Accounts Receivable. The right to receive cash in the future from customers for goods sold or for services performed.

Accounts Receivable Subsidiary Ledger. A subsidiary ledger that includes an accounts receivable account for each customer that contains detailed information such as the amount sold, received, and owed.

Accounts Receivable Turnover Ratio. A ratio that measures the number of times the company collects the average accounts receivable balance in a year. Net credit sales / Average net accounts receivable.

Accrual Basis Accounting. Accounting method that records revenues when earned and expenses when incurred.

Accrued Expense. An expense that the business has incurred but has not yet paid.

Accrued Liability. A liability for which the business knows the amount owed but the bill has not been paid.

Accrued Revenue. A revenue that has been earned but for which the cash has not yet been collected.

Accumulated Depreciation. The sum of all the depreciation expense recorded to date for a depreciable asset.

Acid-Test Ratio. The ratio of the sum of cash, cash equivalents, short-term investments, and net current receivables to total current liabilities. The ratio tells whether the entity could pay all its current liabilities if they came due immediately. (Cash including cash equivalents + Short-term investments + Net current receivables) / Total current liabilities.

Activity-Based Costing (ABC). Focuses on the costs of activities as the building blocks for allocating indirect costs to products and services.

Activity-Based Management (ABM). Using activity-based cost information to make decisions that improve customer satisfaction while also increasing profits.

Adjunct Account. An account that is directly related to another account. Adjunct accounts have the same normal balance as the related account and are added to the related account on the balance sheet.

Adjusted Trial Balance. A list of all the accounts with their adjusted balances.

Adjusting Entry. An entry made at the end of the accounting period that is used to record revenues to the period in which they are earned and expenses to the period in which they occur.

Administrative Expenses. Expenses incurred that are not related to marketing the company's goods and services.

Aging-of-Receivables Method. A method of estimating uncollectible receivables by determining the balance of the Allowance for Bad Debts account based on the age of individual accounts receivable.

Allocation Base. A denominator that links indirect costs to cost objects. Ideally, the allocation base is the primary cost driver of the indirect costs.

Allowance for Bad Debts. A contra account, related to accounts receivable, that holds the estimated amount of uncollectible accounts.

Allowance Method. A method of accounting for uncollectible receivables in which the company estimates bad debts expense instead of waiting to see which customers the company will not collect from.

Amortization. The process by which businesses spread the allocation of an intangible asset's cost over its useful life.

Amortization Schedule. A schedule that details each loan payment's allocation between principal and interest and the beginning and ending loan balances.

Annual Report. Provides information about a company's financial condition.

Annuity. A stream of equal cash payments made at equal time intervals.

Appraisal Costs. Costs incurred to detect poor-quality materials, goods, or services.

Appropriation of Retained Earnings. Restriction of a portion of retained earnings that is recorded by a journal entry.

Assets. Economic resources that are expected to benefit the business in the future. Something the business owns or has control of.

Asset Turnover Ratio. Measures how efficiently a business uses its average total assets to generate sales. Net sales / Average total assets.

Audit. An examination of a company's financial statements and records.

Authorized Stock. The maximum number of shares of stock that the corporate charter allows the corporation to issue.

Available-for-Sale (AFS) Investment. A debt security or an equity security in which the investor holds less than 20% of the voting stock and that isn't a trading investment or a held-to-maturity investment.

Bad Debts Expense. The cost to the seller of extending credit. It arises from the failure to collect from some credit customers.

Balanced Scorecard. The performance evaluation system that requires management to consider both financial performance measures and operational performance measures when judging the performance of a company and its subunits.

Balance Sheet. Reports on the assets, liabilities, and stockholders' equity of the business as of a specific date.

Bank Reconciliation. A document explaining the reasons for the difference between a depositor's cash records and the depositor's cash balance in its bank account.

Bank Statement. A document from the bank that reports the activity in the customer's account. It shows the bank account's beginning and ending balances and lists the month's cash transactions conducted through the bank account.

Benchmarking. The practice of comparing a company with other leading companies.

Bond Payable. A long-term debt issued to multiple lenders called bondholders, usually in increments of $1,000 per bond.

Book Value. A depreciable asset's cost minus accumulated depreciation.

Breakeven Point. The sales level at which operating income is zero. Total revenues equal total costs.

Budget. A financial plan that managers use to coordinate a business's activities.

Budgetary Slack. Occurs when managers intentionally understate expected revenues or overstate expected expenses to increase the chances of receiving favorable performance evaluations.

Business Segment. An identifiable part of the company for which financial information is available.

Callable Bonds. Bonds that the issuer may call and pay off at a specified price whenever the issuer wants.

Canceled Checks. Physical or scanned copies of the maker's cashed (paid) checks.

Capital Asset. An operational asset used for a long period of time.

Capital Budgeting. The process of planning to invest in long-term assets in a way that returns the most profitability to the company.

Capital Expenditure. An expenditure that increases the capacity or efficiency of a plant asset or extends its useful life. Capital expenditures are debited to an asset account.

Capital Expenditures Budget. The budget that presents the company's plan for purchasing property, plant, equipment, and other long-term assets.

Capital Investment. The acquisition of a capital asset.

Capital Rationing. The process of ranking and choosing among alternative capital investments based on the availability of funds.

Capital Stock. Represents the individual's ownership of the corporation's capital.

Capitalize. Recording the acquisition of land, building, or other assets by debiting (increasing) an asset account.

Carrying Amount of Bonds. A bond payable *minus* the discount account current balance or *plus* the premium account current balance.

Cash Basis Accounting. Accounting method that records revenues only when cash is received and expenses only when cash is paid.

Cash Budget. The budget that details how the business expects to go from the beginning cash balance to the desired ending cash balance.

Cash Equivalent. A highly liquid investment that can be converted into cash in three months or less.

Cash Flows. Cash receipts and cash payments of a business.

Cash Payments Journal. Special journal used to record cash payments by check and currency.

Cash Ratio. A measure of a company's ability to pay current liabilities from cash and cash equivalents: (Cash + Cash equivalents) / Total current liabilities.

Cash Receipts Journal. Special journal used to record cash receipts.

Centralized Company. A company in which major planning and controlling decisions are made by top management.

Certified Management Accountants (CMAs). Certified professionals who specialize in accounting and financial management knowledge. They typically work for a single company.

Certified Public Accountants (CPAs). Licensed professional accountants who serve the general public.

Chart of Accounts. A list of all of a company's accounts with their account numbers.

Check. A document that instructs a bank to pay the designated person or business a specified amount of money.

Classified Balance Sheet. A balance sheet that places each asset and each liability into a specific category.

Closing Entries. Entries that transfer the revenues, expenses, and Dividends balances to the Retained Earnings account to prepare the company's books for the next period.

Closing Process. A step in the accounting cycle that occurs at the end of the period. The closing process consists of journalizing and posting the closing entries to set the balances of the revenues, expenses, Income Summary, and Dividends accounts to zero for the next period.

Cloud Computing. Software and data are stored on a third-party server instead of by the business and can be accessed by employees via the Internet.

Collusion. Two or more people working together to circumvent internal controls and defraud a company.

Commercial Substance. A characteristic of a transaction that causes a change in future cash flows.

Common-Size Statement. A financial statement that reports only percentages (no dollar amounts).

Common Stock. Represents the basic ownership of a corporation.

Compound Interest. Interest calculated on the principal and on all previously earned interest.

Compound Journal Entry. A journal entry that is characterized by having multiple debits and/or multiple credits.

Comprehensive Income. A company's change in total stockholders' equity from all sources other than owners' investments and dividends.

Conservatism. A business should report the least favorable figures in the financial statements when two or more possible options are presented.

Consistency Principle. A business should use the same accounting methods and procedures from period to period.

Consolidated Statements. Financial statements that combine the balance sheets, income statements, and statements of cash flow of the parent company with those of its controlling interest affiliates.

Consolidation Accounting. The way to combine the financial statements of two or more companies that have the same owners.

Constraint. A factor that restricts production or sale of a product.

Contingent Liability. A potential liability that depends on some future event.

Contra Account. An account that is paired with, and is listed immediately after, its related account in the chart of accounts and associated financial statement and whose normal balance is the opposite of the normal balance of the related account.

Contributed Capital. Owner contributions to a corporation.

Contribution Margin. The amount that contributes to covering the fixed costs and then to providing operating income. Net sales revenue − Variable costs.

Contribution Margin Income Statement. The income statement that groups cost by behavior—variable or fixed—and highlights the contribution margin.

Contribution Margin Ratio. The ratio of contribution margin to net sales revenue. Contribution margin / Net sales revenue.

Control Account. An account whose balance equals the sum of the balances in a group of related accounts in a subsidiary ledger.

Controllable Cost. A cost that a manager has the power to influence by his or her decisions.

Controlling. Implementing plans and evaluating the results of business operations by comparing the actual results to the budget.

Controlling Interest Investment. An equity security in which the investor owns more than 50% of the investee's voting stock.

Conversion Costs. The cost to convert raw materials into finished goods: Direct labor plus manufacturing overhead.

Conversion Costs Account. A temporary account used in JIT management systems to accumulate direct labor and manufacturing overhead costs and then allocate the costs as units are completed.

Copyright. Exclusive right to reproduce and sell a book, musical composition, film, other work of art, or intellectual property.

Corporation. A business organized under state law that is a separate legal entity.

Cost-Based Transfer Price. A transfer price based on the cost of producing the goods.

Cost/Benefit Analysis. Weighing costs against benefits to help make decisions.

Cost Center. A responsibility center whose manager is only responsible for controlling costs.

Cost Driver. The primary factor that causes a cost to increase or decrease.

Cost Object. Anything for which managers want a separate measurement of cost.

Cost of Goods Available for Sale. The total cost spent on inventory that was available to be sold during a period.

Cost of Goods Manufactured. The manufacturing costs of the goods that finished the production process in a given accounting period.

Cost of Goods Sold (COGS). The cost of the merchandise inventory that the business has sold to customers.

Cost-Plus Pricing. A method to manage costs and profits by determining the price. Full product cost + Desired profit = Cost-plus price.

Cost Principle. A principle that states that acquired assets and services should be recorded at their actual cost.

Cost Structure. The proportion of fixed costs to variable costs.

Cost Variance. Measures how well the business keeps unit costs of material and labor inputs within standards.

Cost-Volume-Profit (CVP) Analysis. A planning tool that expresses the relationship among costs, volume, and prices and their effects on profits and losses.

Credit. The right side of a T-account.

Credit Memorandum. An increase in a bank account.

Creditor. Any person or business to whom a business owes money.

Credit Terms. The payment terms of purchase or sale as stated on the invoice.

Cumulative Preferred Stock. Preferred stock whose owners must receive all dividends in arrears plus the current year dividend before the corporation pays dividends to the common stockholders.

Current Asset. An asset that is expected to be converted to cash, sold, or used up during the next 12 months or within the business's normal operating cycle if the cycle is longer than a year.

Current Liability. A liability that must be paid with cash or with goods and services within one year or within the entity's operating cycle if the cycle is longer than a year.

Current Portion of Notes Payable. The amount of the principal that is payable within one year.

Current Ratio. Measures the company's ability to pay current liabilities from current assets. Total current assets / Total current liabilities.

Days' Sales in Inventory. Measures the average number of days that inventory is held by a company. 365 days / Inventory turnover.

Days' Sales in Receivables. The ratio of average net accounts receivable to one day's sales. The ratio tells how many days it takes to collect the average level of accounts receivable. 365 days / Accounts receivable turnover ratio.

Debentures. Unsecured bonds backed only by the credit worthiness of the bond issuer.

Debit. The left side of a T-account.

Debit Memorandum. A decrease in a bank account.

Debtor. The party to a credit transaction who takes on an obligation/payable.

Debt Ratio. Shows the proportion of assets financed with debt. Total liabilities / Total assets.

Debt to Equity Ratio. A ratio that measures the proportion of total liabilities relative to total equity. Total liabilities / Total equity.

Debt Security. Represents a credit relationship with another company or governmental entity that typically pays interest for a fixed period.

Decentralized Company. A company that is divided into business segments, with segment managers making planning and controlling decisions for their segments.

Deferred Expense. An asset created when a business makes advance payments of future expenses.

Deferred Revenue. A liability created when a business collects cash from customers in advance of completing a service or delivering a product.

Deficit. Debit balance in the Retained Earnings account.

Degree of Operating Leverage. The ratio that measures the effects that fixed costs have on changes in operating income when sales volume changes. Contribution margin / Operating income.

Depletion. The process by which businesses spread the allocation of a natural resource's cost over its usage.

Deposit in Transit. A deposit recorded by the company but not yet by its bank.

Deposit Ticket. A bank form that is completed by the customer and shows the amount of each deposit.

Depreciable Cost. The cost of a plant asset minus its estimated residual value.

Depreciation. The process by which businesses spread the allocation of a plant asset's cost over its useful life.

Differential Analysis. A method that looks at how operating income would differ under each decision alternative; leaves out irrelevant information.

Direct Cost. Cost that can be easily and cost-effectively traced to a cost object.

Direct Labor (DL). The labor cost of employees who convert raw materials into finished products.

Direct Materials (DM). Materials that become a physical part of a finished product and whose costs are easily traced to the finished product.

Direct Method. A format of the operating activities section of the statement of cash flows; lists the operating cash receipts and cash payments.

Direct Write-off Method. A method of accounting for uncollectible receivables in which the company records bad debts expense when a customer's account receivable is uncollectible.

Disclosure Principle. A business's financial statements must report enough information for outsiders to make knowledgeable decisions about the company.

Discount on Bonds Payable. Occurs when a bond's issue price is less than face value.

Discount Rate. Management's minimum desired rate of return on a capital investment.

Dishonor a Note. Failure of a note's maker to pay a note receivable at maturity.

Dividend. A distribution of a corporation's earnings to stockholders.

Dividend in Arrears. A preferred stock dividend is in arrears if the dividend has not been paid for the year and the preferred stock is cumulative.

Dividend Payout. The ratio of dividends declared per common share relative to the earnings per share of the company. Annual dividend per share / Earnings per share.

Dividend Yield. Ratio of annual dividends per share of stock to the stock's market price per share. Measures the percentage of a stock's market value that is returned annually as dividends to stockholders. Annual dividend per share / Market price per share.

Dollar Value Bias. The bias one sees from comparing numbers in absolute (dollars) rather than relative (percentage) terms.

Double-Declining-Balance Method. An accelerated depreciation method that computes annual depreciation by multiplying the depreciable asset's decreasing book value by a constant percent that is two times the straight-line depreciation rate.

Double-Entry System. A system of accounting in which every transaction affects at least two accounts.

Earnings per Share (EPS). Amount of a company's net income (loss) for each share of its outstanding common stock. (Net income – Preferred dividends) / Weighted average number of common shares outstanding.

Economic Entity Assumption. An organization that stands apart as a separate economic unit.

Effective-Interest Amortization Method. An amortization model that calculates interest expense based on the current carrying amount of the bond and the market interest rate at issuance, then amortizes the difference between the cash interest payment and calculated interest expense as a decrease to the discount or premium.

Efficiency Variance. Measures how well the business uses its materials or human resources.

Electronic Data Interchange (EDI). A streamlined process that bypasses paper documents altogether. Computers of customers communicate directly with the computers of suppliers to automate routine business transactions.

Electronic Funds Transfer (EFT). A system that transfers cash by electronic communication rather than by paper documents.

Encryption. Rearranging plain-text messages by a mathematical process—the primary method of achieving security in e-commerce.

Enterprise Resource Planning (ERP). Software system that can integrate all of a company's functions, departments, and data into a single system.

Equity. The owners' claims to the assets of the business.

Equity Security. Represents stock ownership in another company that sometimes pays dividends.

Equivalent Units of Production (EUP). Used to measure the amount of materials added to or work done on partially completed units and expressed in terms of fully completed units.

Evaluated Receipts Settlement (ERS). A procedure that compresses the payment approval process into a single step by comparing the receiving report to the purchase order.

Expenses. The cost of selling goods or services.

External Auditor. An outside accountant, completely independent of the business, who evaluates the controls to ensure that the financial statements are presented fairly in accordance with GAAP.

External Failure Costs. Costs incurred when the company does not detect poor-quality goods or services until after delivery to customers.

Extraordinary Repair. Repair work that generates a capital expenditure because it extends the asset's life past the normal expected life.

Face Value. The amount a borrower must pay back to the bondholders on the maturity date.

Fair Value. The price that would be used if the investments were sold on the market.

Federal Insurance Contributions Act (FICA). The federal act that created the Social Security tax that provides retirement, disability, and medical benefits.

Financial Accounting. The field of accounting that focuses on providing information for external decision makers.

Financial Accounting Standards Board (FASB). The private organization that oversees the creation and governance of accounting standards in the United States.

Financial Budget. The budget that includes the cash budget and the budgeted financial statements.

Financial Leverage. Occurs when a company earns more income on borrowed money than the related interest expense.

Financial Statements. Business documents that are used to communicate information needed to make business decisions.

Financing Activities. Activities that increase or decrease long-term liabilities and equity; a section of the statement of cash flows.

Finished Goods Inventory (FG). Completed goods that have not yet been sold.

Firewall. A device that enables members of a local network to access the network, while keeping nonmembers out of the network.

First-In, First-Out (FIFO) Method. An inventory costing method in which the first costs into inventory are the first costs out to cost of goods sold. Ending inventory is based on the costs of the most recent purchases.

First-In, First-Out (FIFO) Method (for Process Costing). Determines the cost of equivalent units of production by accounting for beginning inventory costs separately from current period costs. It assumes the first units started in the production process are the first units completed and sold.

Fiscal Year. An accounting year of any 12 consecutive months that may or may not coincide with the calendar year.

Fixed Cost. A cost that remains the same *in total*, regardless of changes over wide ranges of volume of activity.

Flexible Budget. A budget prepared for various levels of sales volume.

Flexible Budget Variance. The difference between actual results and the expected results in the flexible budget for the *actual* units sold.

FOB Destination. Situation in which the buyer takes ownership (title) to the goods at the delivery destination point and the seller typically pays the freight.

FOB Shipping Point. Situation in which the buyer takes ownership (title) to the goods after the goods leave the seller's place of business (shipping point) and the buyer typically pays the freight.

Franchise. Privilege granted by a business to sell a product or service under specified conditions.

Free Cash Flow. The amount of cash available from operating activities after paying for planned investments in long-term assets and after paying dividends to shareholders. Net cash provided by operating activities – Cash payments planned for investments in long-term assets – Cash dividends.

Freight In. The transportation cost to ship goods into the purchaser's warehouse; therefore, it is freight on purchased goods.

Freight Out. The transportation cost to ship goods out of the seller's warehouse; therefore, it is freight on goods sold to a customer.

Full Product Cost. The cost to develop, produce, and deliver the product or service.

Generally Accepted Accounting Principles (GAAP). Accounting guidelines, currently formulated by the *Financial Accounting Standards Board (FASB)*; the main U.S. accounting rule book.

Goal Congruence. Aligning the goals of business segment managers and other subordinates with the goals of top management.

Going Concern Assumption. Assumes that the entity will remain in operation for the foreseeable future.

Goodwill. Excess of the cost of an acquired company over the sum of the market values of its net assets (assets minus liabilities).

Gross Pay. The total amount of salary, wages, commissions, and any other employee compensation before taxes and other deductions.

Gross Profit. Excess of net Sales Revenue over Cost of Goods Sold.

Gross Profit Percentage. Measures the profitability of each sales dollar above the cost of goods sold. Gross profit / Net sales revenue.

Hardware. Electronic equipment that includes computers, monitors, printers, and the network that connects them.

Held-to-Maturity (HTM) Investment. A debt security the investor intends to hold until it matures.

High-Low Method. A method used to separate mixed costs into their variable and fixed components, using the highest and lowest activity levels.

Horizontal Analysis. The study of percentage changes in comparative financial statements. (Dollar amount of change / Base period amount) × 100.

Impairment. A permanent decline in asset value.

Imprest System. A way to account for petty cash by maintaining a constant balance in the petty cash account. At any time, cash plus petty cash tickets must total the amount allocated to the petty cash fund.

Income Statement. Reports the *net income* or *net loss* of the business for a specific period.

Income Summary. A temporary account into which revenues and expenses are transferred prior to their final transfer into the Retained Earnings account. Summarizes net income (or net loss) for the period.

Income Tax Expense. Expense incurred by a corporation related to federal and state income taxes.

Income Tax Withholding. Income tax deducted from an employee's gross pay.

Indirect Cost. Cost that cannot be easily or cost-effectively traced to a cost object.

Indirect Labor. Labor costs for activities that support the production process but either cannot be conveniently traced directly to specific finished products or are not large enough to justify tracing to the specific product.

Indirect Materials. Materials used in making a product but whose costs either cannot be conveniently traced directly to specific finished products or are not large enough to justify tracing to the specific product.

Indirect Method. A format of the operating activities section of the statement of cash flows; starts with net income and reconciles to net cash provided by operating activities.

Intangible Asset. An asset with no physical form that is valuable because of the special rights it carries.

Interest. The revenue to the payee for loaning money—the expense to the debtor.

Interest Period. The period of time during which interest is computed. It extends from the original date of the note to the maturity date.

Interest Rate. The percentage rate of interest specified by the note.

Internal Auditor. An employee of the business who ensures the company's employees are following company policies, that the company meets all legal requirements, and that operations are running efficiently.

Internal Control. The organizational plan and all the related measures adopted by an entity to safeguard assets, encourage employees to follow company policies, promote operational efficiency, and ensure accurate and reliable accounting records.

Internal Control Report. A report by management describing its responsibility for and the adequacy of internal controls over financial reporting.

Internal Failure Costs. Costs incurred when the company corrects poor-quality goods or services before delivery to customers.

Internal Rate of Return (IRR). The rate of return, based on discounted cash flows, of a capital investment. The interest rate that makes the NPV of the investment equal to zero.

International Accounting Standards Board (IASB). The private organization that oversees the creation and governance of *International Financial Reporting Standards (IFRS)*.

International Financial Reporting Standards (IFRS). A set of global accounting guidelines, formulated by the *International Accounting Standards Board (IASB)*.

Inventory Costing Method. A method of approximating the flow of inventory costs in a business that is used to determine the amount of cost of goods sold and ending merchandise inventory.

Inventory Shrinkage. The loss of inventory that occurs because of theft, damage, and errors.

Inventory Turnover. Measures the number of times a company sells its average level of merchandise inventory during a period. Cost of goods sold / Average merchandise inventory.

Investee. The corporation that issued the bond or stock to the investor.

Investment Center. A responsibility center whose manager is responsible for generating profits and efficiently managing the center's invested capital.

Investing Activities. Activities that increase or decrease long-term assets; a section of the statement of cash flows.

Investor. The owner of a bond or stock of a corporation.

Invoice. A seller's request for payment from the purchaser.

Irrelevant Cost. A cost that does not affect the decision because it is not in the future or does not differ among alternatives.

Issue Price. The price the stock initially sells for the first time it is sold.

Issued Stock. Stock that has been issued but may or may not be held by stockholders.

Job. The production of a unique product or specialized service. May be one unit or a batch of units.

Job Cost Record. A document that shows the direct materials, direct labor, and manufacturing overhead costs for an individual job.

Job Order Costing System. An accounting system that accumulates costs by job. Used by companies that manufacture unique products or provide specialized services.

Joint Cost. A cost of a production process that yields multiple products.

Journal. A record of transactions in date order.

Just-In-Time Costing. A costing system that starts with output completed and then assigns manufacturing costs to units sold and to inventories.

Just-In-Time (JIT) Management. A cost management system in which a company produces products just in time to satisfy needs. Suppliers deliver materials just in time to begin production, and finished units are completed just in time for delivery to the customer.

Key Performance Indicator (KPI). A summary performance measure that helps managers assess whether the company is achieving its goals.

Labor Time Record. A record used to assign direct labor cost to specific jobs.

Lag Indicator. A performance measure that indicates past performance.

Land Improvement. A depreciable improvement to land, such as fencing, sprinklers, paving, signs, and lighting.

Large Stock Dividend. A stock dividend greater than 20% to 25% of the issued and outstanding stock.

Last-In, First-Out (LIFO) Method. An inventory costing method in which the last costs into inventory are the first costs out to cost of goods sold. The method leaves the oldest costs—those of beginning inventory and the earliest purchases of the period—in ending inventory.

Lead Indicator. A performance measure that forecasts future performance.

Ledger. The record holding all the accounts of a business, the changes in those accounts, and their balances.

Legal Capital. The portion of stockholders' equity that cannot be used for dividends.

Liabilities. Debts that are owed to *creditors*.

Limited-Liability Company (LLC). A company in which each member is only liable for his or her own actions.

Liquidity. A measure of how quickly an item can be converted to cash.

License. Privilege granted by a government to use public property in performing services.

Lock-Box System. A system in which customers send their checks to a post office box that belongs to a bank. A bank employee empties the box daily and records the deposits into the company's bank account.

Long-Term Asset. An asset that will not be converted to cash or used up within the business's operating cycle or one year, whichever is greater.

Long-Term Investment. Investments in bonds (debt securities) or stocks (equity securities) in which the company intends to hold the investment for longer than one year.

Long-Term Liability. A liability that does not need to be paid within one year or within the entity's operating cycle, whichever is longer.

Lower-of-Cost-or-Market (LCM) Rule. Rule that merchandise inventory should be reported in the financial statements at whichever is lower—its historical cost or its market value.

Maker. The party who issues the check.

Management Accountability. The manager's responsibility to wisely manage the resources of an organization.

Management by Exception. When managers concentrate on results that are outside the accepted parameters.

Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A). The section of the annual report that is intended to help investors understand the results of operations and the financial condition of the company.

Managerial Accounting. The field of accounting that focuses on providing information for internal decision makers.

Manufacturing Company. A company that uses labor, equipment, supplies, and facilities to convert raw materials into finished products.

Manufacturing Overhead (MOH). Manufacturing costs that cannot be easily and cost-effectively traced to a cost object. Includes all manufacturing costs except direct materials and direct labor.

Margin of Safety. The excess of expected sales over breakeven sales. The amount sales can decrease before the company incurs an operating loss.

Market-Based Transfer Price. A transfer priced based on the current market value of the goods.

Market Interest Rate. The interest rate that investors demand in order to loan their money.

Master Budget. The set of budgeted financial statements and supporting schedules for the entire organization; includes the operating budget, capital expenditures budget, and financial budget.

Matching Principle. Guides accounting for expenses, ensures that all expenses are recorded when they are incurred during the period, and matches those expenses against the revenues of the period.

Materiality Concept. A company must perform strictly proper accounting only for items that are significant to the business's financial situation.

Materials Requisition. Request for the transfer of raw materials to the production floor.

Maturity Date. The date when a note is due.

Maturity Value. The sum of the principal plus interest due at maturity.

Memorandum Entry. An entry in the journal that notes a significant event but has no debit or credit amount.

Merchandise Inventory. The merchandise that a business sells to customers.

Merchandiser. A business that sells merchandise, or goods, to customers.

Merchandising Company. A company that resells products previously bought from suppliers.

Mixed Cost. A cost that has both fixed and variable components.

Modified Accelerated Cost Recovery System (MACRS). A depreciation method that is used for tax purposes.

Monetary Unit Assumption. The assumption that requires the items on the financial statements to be measured in terms of a monetary unit.

Mortgages Payable. Long-term debts that are backed with a security interest in specific property.

Multi-Step Income Statement. Income statement format that contains subtotals to highlight significant relationships. In addition to net income, it reports gross profit and operating income.

Natural Resource. An asset that comes from the earth and is consumed.

Net Income. The result of operations that occurs when total revenues are greater than total expenses.

Net Loss. The result of operations that occurs when total expenses are greater than total revenues.

Net Pay. Gross pay minus all deductions. The amount of compensation that the employee actually takes home.

Net Present Value (NPV). A capital investment analysis method that measures the net difference between the present value of the investment's net cash inflows and the investment's cost.

Net Purchases. Purchases less purchase returns and allowances less purchase discounts.

Net Realizable Value. The net value a company expects to collect from its accounts receivable. Accounts Receivable less Allowance for Bad Debts.

Net Sales Revenue. The amount a company has earned on sales of merchandise inventory after returns, allowances, and discounts have been taken out. Sales Revenue less Sales Returns and Allowances and Sales Discounts.

Network. The system of electronic linkages that allows different computers to share the same information.

Non-cash Investing and Financing Activities. Investing and financing activities that do not involve cash.

Noncumulative Preferred Stock. Preferred stock whose owners do not receive passed dividends.

Nonsufficient Funds (NSF) Check. A check for which the maker's bank account has insufficient money to pay the check.

No-Par Stock. Stock that has no amount (par) assigned to it.

Normal Balance. The balance that appears on the increase side of an account.

Notes Payable. A written promise made by the business to pay a debt, usually involving interest, in the future.

Notes Receivable. A written promise that a customer will pay a fixed amount of principal plus interest by a certain date in the future.

Obsolete. An asset is considered obsolete when a newer asset can perform the job more efficiently than the old.

Operating Activities. Activities that create revenue or expense in the entity's business; a section of the statement of cash flows.

Operating Budget. The set of budgets that projects sales revenue, cost of goods sold, and selling and administrative expenses, all of which feed into the cash budget and then the budgeted financial statements.

Operating Cycle. The time span during which cash is paid for goods and services, which are then sold to customers from whom the business collects cash.

Operating Expenses. Expenses, other than Cost of Goods Sold, that are incurred in the entity's major ongoing operations.

Operating Income. Measures the results of the entity's major ongoing activities. Gross profit minus operating expenses.

Operating Leverage. Effects that fixed costs have on changes in operating income when sales volume changes.

Operational Budget. A short-term financial plan used to coordinate the activities needed to achieve the short-term goals of the company.

Opportunity Cost. The benefit given up by choosing an alternative course of action.

Other Revenues and Expenses. Revenues or expenses that are outside the normal, day-to-day operations of a business, such as a gain or loss on the sale of plant assets or interest expense.

Outstanding Check. A check issued by a company and recorded on its books but not yet paid by its bank.

Outstanding Stock. Issued stock in the hands of stockholders.

Overallocated Overhead. Occurs when the actual manufacturing overhead costs are less than allocated manufacturing overhead costs.

Paid-In Capital. Represents amounts received from the stockholders of a corporation in exchange for stock.

Paid-In Capital in Excess of Par. Represents amounts received from stockholders in excess of par value.

Parent Company. A company that owns a controlling interest in another company.

Partnership. A business with two or more owners and not organized as a corporation.

Par Value. An amount assigned by a company to a share of its stock.

Patent. An intangible asset that is a federal government grant conveying an exclusive 20-year right to produce and sell a process, product, or formula.

Payback. A capital investment analysis method that measures the length of time it takes to recover, in net cash inflows, the cost of the initial investment.

Payee. The individual or business to whom the check is paid.

Payroll Register. A schedule that summarizes the earnings, withholdings, and net pay for each employee.

Performance Evaluation System. A system that provides top management with a framework for maintaining control over the entire organization.

Pension Plan. A plan that provides benefits to retired employees.

Percent-of-Receivables Method. A method of estimating uncollectible receivables by determining the balance of the Allowance for Bad Debts account based on a percentage of accounts receivable.

Percent-of-Sales Method. A method of estimating uncollectible receivables that calculates bad debts expense based on a percentage of net credit sales.

Period Cost. Operating cost that is expensed in the accounting period in which it is incurred.

Periodic Inventory System. An inventory system that requires businesses to obtain a physical count of inventory to determine quantities on hand.

Permanent Account. An account that is *not* closed at the end of the period—the asset, liability, Common Stock, and Retained Earnings accounts.

Perpetual Inventory System. An inventory system that keeps a running computerized record of merchandise inventory.

Petty Cash. A fund containing a small amount of cash that is used to pay for minor expenditures.

Planning. Choosing goals and deciding how to achieve them.

Plant Asset. Long-lived, tangible asset, such as land, buildings, and equipment, used in the operation of a business.

Post-Audit. The comparison of the actual results of capital investments to the projected results.

Post-Closing Trial Balance. A list of the accounts and their balances at the end of the period after journalizing and posting the closing entries. It should include only permanent accounts.

Posting. Transferring data from the journal to the ledger.

Predetermined Overhead Allocation Rate. Estimated overhead cost per unit of the allocation base, calculated at the beginning of the accounting period. Total estimated overhead costs / Total estimated quantity of the overhead allocation base.

Preemptive Right. Stockholder's right to maintain his or her proportionate ownership in the corporation.

Preferred Stock. Stock that gives its owners certain advantages over common stockholders, such as the right to receive dividends before the common stockholders and the right to receive assets before the common stockholders if the corporation liquidates.

Premium. The amount above par at which a stock is issued.

Premium on Bonds Payable. Occurs when a bond's issue price is more than face value.

Prepaid Expense. A payment of an expense in advance.

Present Value. The amount a person would invest now to receive a greater amount in the future.

Prevention Costs. Costs incurred to avoid poor-quality goods or services.

Price/Earnings Ratio. The ratio of the market price of a share of common stock to the company's earnings per share. Measures the value that the stock market places on $1 of a company's earnings. Market price per share of common stock / Earnings per share.

Price-Setter. A company that has control over the prices of its products and services because its products and services are unique and there is little competition.

Price-Taker. A company that has little control over the prices of its products and services because its products and services are not unique or competition is intense.

Prime Costs. Direct materials plus direct labor.

Principal. The amount loaned out by the payee and borrowed by the maker of the note.

Prior-Period Adjustment. A correction to Retained Earnings for an error of an earlier period.

Process. One of a series of steps in manufacturing production; usually associated with making large quantities of similar items.

Process Costing System. An accounting system that accumulates costs by process. Used by companies that manufacture identical units through a series of uniform production steps or processes.

Product Cost. The cost of purchasing or making a product. The cost is recorded as an asset and then expensed when the product is sold.

Production Cost Report. A report prepared by a processing department for equivalent units of production, production costs, and the assignment of those costs to the completed and in process units.

Profitability Index. Computes the number of dollars returned for every dollar invested, with all calculations performed in present value dollars. Present value of net cash inflows / Initial investment.

Profit Center. A responsibility center whose manager is responsible for generating revenue and controlling costs and, therefore, profits.

Profit Margin Ratio. A profitability measure that shows how much net income is earned on every dollar of net sales. Net income / Net sales.

Public Company. A company that sells its stock to the general public.

Purchase Allowance. An amount granted to the purchaser as an incentive to keep goods that are not "as ordered."

Purchase Discount. A discount that businesses offer to purchasers as an incentive for early payment.

Purchase Return. A situation in which sellers allow purchasers to return merchandise that is defective, damaged, or otherwise unsuitable.

Purchases Journal. Special journal used to record all purchases of merchandise inventory, office supplies, and other assets on account.

Quality Management System (QMS). A system that helps managers improve a business's performance by providing quality products and services.

Rate of Return on Common Stockholders' Equity. Shows the relationship between net income available to common stockholders and their average common equity invested in the company. (Net income − Preferred dividends) / Average common stockholders' equity.

Rate of Return on Total Assets. A ratio that measures the success a company has in using its assets to earn income. (Net income + Interest expense) / Average total assets.

Raw and In-Process Inventory. A combined account for Raw Materials Inventory and Work-In-Process Inventory used in JIT management systems.

Raw Materials Inventory (RM). Materials used to manufacture a product.

Receivable. A monetary claim against a business or an individual.

Relative-Market-Value Method. A method of allocating the total cost (100%) of multiple assets purchased at one time. Total cost is divided among the assets according to their relative market values.

Relevant Cost. A cost that is relevant to a particular decision because it is a future cost and differs among alternatives.

Relevant Information. Expected future data that differ among alternatives.

Relevant Range. The range of volume where total fixed costs and variable cost per unit remain constant.

Remittance Advice. An optional attachment to a check that tells the business the reason for the payment.

Residual Income (RI). A measure of profitability and efficiency computed as actual operating income less a specified minimum acceptable operating income.

Residual Value. The expected value of a depreciable asset at the end of its useful life.

Responsibility Accounting System. A system for evaluating the performance of each responsibility center and its manager.

Responsibility Center. A part of the organization for which a manager has decision-making authority and accountability for the results of those decisions.

Retailer. A type of merchandiser that buys merchandise either from a manufacturer or a wholesaler and then sells those goods to consumers.

Retained Earnings. Equity earned by profitable operations of a corporation that is not distributed to stockholders.

Return on Assets (ROA). Measures how profitably a company uses its assets. Net income / Average total assets.

Return on Investment (ROI). A measure of profitability and efficiency. Operating income / Average total assets.

Revenue Center. A responsibility center whose manager is only responsible for generating revenue.

Revenue Expenditure. An expenditure that does not increase the capacity or efficiency of an asset or extend its useful life. Revenue expenditures are debited to an expense account.

Revenue Recognition Principle. Requires companies to record revenue when it has been earned and determines the amount of revenue to record.

Revenues. Amounts earned from delivering goods or services to customers.

Reversing Entry. A special journal entry that eases the burden of accounting for transactions in the next period. Such entries are the exact opposite of a prior adjusting entry.

Routing Number. On a check, the 9-digit number that identifies the bank upon which the payment is drawn.

Sales Discounts. Reduction in the amount of cash received from a customer for early payment.

Sales Journal. Special journal used to record credit sales.

Sales Mix. The combination of products that make up total sales.

Sales Returns and Allowances. Decreases in the seller's receivable from a customer's return of merchandise or from granting the customer an allowance from the amount owed to the seller.

Sales Revenue. The amount that a merchandiser earns from selling its inventory.

Sales Volume Variance. The difference between the expected results in the flexible budget for the *actual* units sold and the static budget.

Sarbanes-Oxley Act (SOX). Requires companies to review internal control and take responsibility for the accuracy and completeness of their financial reports.

Secured Bonds. Bonds that give bondholders the right to take specified assets of the issuer if the issuer fails to pay principal or interest.

Securities and Exchange Commission (SEC). U.S. governmental agency that oversees the U.S. financial markets.

Security. A share or interest representing financial value.

Selling Expenses. Expenses related to marketing and selling the company's goods and services.

Sensitivity Analysis. A "what if" technique that estimates profit or loss results if sales price, costs, volume, or underlying assumptions change.

Separation of Duties. Dividing responsibilities between two or more people to limit fraud and promote accuracy of accounting records.

Serial Bonds. Bonds that mature in installments at regular intervals.

Server. The main computer where data are stored, which can be accessed from many different computers.

Service Company. A company that sells services—time, skills, and/or knowledge—instead of products.

Short-Term Investments. Investments in debt and equity securities that are highly liquid and that the investor intends to sell in one year or less.

Short-Term Note Payable. A written promise made by the business to pay a debt, usually involving interest, within one year or less.

Signature Card. A card that shows each authorized person's signature for a bank account.

Significant Interest Investment. An equity security in which the investor owns from 20% to 50% of the investee's voting stock.

Simple Interest. Interest calculated only on the principal amount.

Single-Step Income Statement. Income statement format that groups all revenues together and then lists and deducts all expenses together without calculating any subtotals.

Small Stock Dividend. A stock dividend of less than 20% to 25% of the issued and outstanding stock.

Social Security (FICA) Tax. Federal Insurance Contributions Act (FICA) tax, which is withheld from employees' pay and matched by the employer.

Software. Set of programs or instructions that drives the computer to perform the work desired.

Sole Proprietorship. A business with a single owner.

Source Document. Provides the evidence and data for accounting transactions.

Special Journal. An accounting journal designed to record one specific type of transaction.

Specific Identification Method. An inventory costing method based on the specific cost of particular units of inventory.

Stakeholder. An individual or group that has an interest in a business, including customers, creditors, suppliers, and investors.

Standard. A price, cost, or quantity that is expected under normal conditions.

Standard Cost System. An accounting system that uses standards for product costs—direct materials, direct labor, and manufacturing overhead.

Stated Interest Rate. The interest rate that determines the amount of cash interest the borrower pays and the investor receives each year.

Stated Value Stock. No-par stock that has been assigned an amount similar to par value.

Statement of Cash Flows. Reports on a business's cash receipts and cash payments for a specific period.

Statement of Retained Earnings. Reports how the company's retained earnings balance changed from the beginning to the end of the period.

Static Budget. A budget prepared for only one level of sales volume.

Static Budget Variance. The difference between actual results and the expected results in the static budget.

Stock Certificate. Paper evidence of ownership in a corporation.

Stock Dividend. A distribution by a corporation of its own stock to its stockholders.

Stockholder. A person who owns stock in a corporation.

Stockholders' Equity. A corporation's equity that includes paid-in capital and retained earnings.

Stock Split. An increase in the number of issued and outstanding shares of stock coupled with a proportionate reduction in the par value of the stock.

Straight-Line Method. A depreciation method that allocates an equal amount of depreciation each year. (Cost – Residual value) / Useful life.

Straight-Line Amortization Method. An amortization method that allocates an equal amount of bond discount or premium to each interest period over the life of the bond.

Strategic Budget. A long-term financial plan used to coordinate the activities needed to achieve the long-term goals of the company.

Subsidiary Company. A company that is controlled by another corporation.

Subsidiary Ledger. Record of accounts that provides supporting details on individual balances, the total of which appears in a general ledger account.

Sunk Cost. A cost that was incurred in the past and cannot be changed regardless of which future action is taken.

T-Account. A summary device that is shaped like a capital *T* with debits posted on the left side of the vertical line and credits on the right side of the vertical line.

Target Cost. The maximum cost to develop, produce, and deliver the product or service *and* earn the desired profit. Target sales price minus desired profit.

Target Full Product Cost. The full cost to develop, produce, and deliver the product or service.

Target Price. The amount customers are willing to pay for a product or service.

Target Pricing. A method to manage costs and profits by determining the target full product cost. Revenue at market price − Desired profit = Target full product cost.

Target Profit. The operating income that results when sales revenue minus variable and fixed costs equals management's profit goal.

Temporary Account. An account that relates to a particular accounting period and is closed at the end of that period—the revenues, expenses, Income Summary, and Dividends accounts.

Term Bonds. Bonds that all mature at the same time.

Time Period Concept. Assumes that a business's activities can be sliced into small time segments and that financial statements can be prepared for specific periods, such as a month, quarter, or year.

Times-Interest-Earned Ratio. Evaluates a business's ability to pay interest expense. (Net income + Income tax expense + Interest expense) / Interest expense.

Time Value of Money. Recognition that money earns interest over time.

Timing Difference. Difference that arises between the balance on the bank statement and the balance on the company's books because of a time lag in recording transactions.

Total Quality Management (TQM). A philosophy designed to integrate all organizational areas in order to provide customers with superior products and services, while meeting organizational goals throughout the value chain.

Trademark. An asset that represents distinctive identifications of a product or service.

Trading Investment. A debt security or an equity security in which the investor holds less than 20% of the voting stock and that the investor plans to sell in the very near future.

Trading on the Equity. Earning more income on borrowed money than the related interest expense, thereby increasing the earnings for the owners of the business.

Transaction. An event that affects the financial position of the business and can be measured with faithful representation.

Transfer Price. The transaction amount of one unit of goods when the transaction occurs between divisions within the same company.

Transferred In Costs. Costs that were incurred in a previous process and brought into a later process as part of the product's cost.

Treasury Stock. A corporation's own stock that it has previously issued and later reacquired.

Trend Analysis. A form of horizontal analysis in which percentages are computed by selecting a base period as 100% and expressing amounts for following periods as a percentage of the base period amount. (Any period amount / Base period amount) × 100.

Trial Balance. A list of all ledger accounts with their balances at a point in time.

Triple Bottom Line. Evaluating a company's performance by its economic (profits), social (people), and environmental (planet) impact.

Underallocated Overhead. Occurs when the actual manufacturing overhead costs are more than allocated manufacturing overhead costs.

Underwriter. A firm that handles the issuance of a company's stock to the public, usually assuming some of the risk by agreeing to buy the stock if the firm cannot sell all of the stock to its clients.

Unearned Revenue. A liability created when a business collects cash from customers in advance of providing services or delivering goods.

Unemployment Compensation Tax. Payroll tax paid by employers to the government, which uses the cash to pay unemployment benefits to people who are out of work.

Units-of-Production Method. A depreciation method that allocates a varying amount of depreciation each year based on an asset's usage.

Useful Life. Length of the service period expected from an asset. May be expressed in time, such as months or years, or usage, such as units produced, hours used (for machinery), or miles driven (for a truck).

Value Chain. Includes all activities that add value to a company's products and services.

Value Engineering. Reevaluating activities to reduce costs while satisfying customer needs.

Variable Cost. A cost that increases or decreases *in total* in direct proportion to increases or decreases in the volume of activity.

Variable Costing. The product costing method that assigns only variable manufacturing costs to products: direct materials, direct labor, and variable manufacturing overhead. Used for internal reporting.

Variance. The difference between an actual amount and the budgeted amount; labeled as favorable if it increases operating income and unfavorable if it decreases operating income.

Vendor. The individual or business from whom a company purchases goods.

Vertical Analysis. An analysis of a financial statement that reveals the relationship of each statement item to its base amount, which is the 100% figure. (Specific item / Base amount) × 100.

Warranty. An agreement that guarantees a company's product against defects.

Weighted-Average Method. An inventory costing method based on the weighted-average cost per unit of inventory that is calculated after each purchase. Weighted-average cost per unit is determined by dividing the cost of goods available for sale by the number of units available.

Weighted-Average Method (for Process Costing). Determines the average cost of equivalent units of production by combining beginning inventory costs with current period costs.

Wholesaler. A type of merchandiser that buys goods from manufacturers and then sells them to retailers.

Working Capital. A measure of a business's ability to meet its short-term obligations with its current assets. Current assets − Current liabilities.

Work-in-Process Inventory (WIP). Goods that have been started in the manufacturing process but are not yet complete.

Worksheet. An internal document that helps summarize data for the preparation of financial statements.

Subject Index

Company Index

Photo Credits

Front Matter

Page 3: (top) Bill Woodhull; (middle) Richard Smith; (bottom) Kam-Wah Tsui

Chapter 1

Page 25: (top) Bragin Alexey/Shutterstock; (middle right) Barbara Tripp/Shutterstock; (bottom left) lightwavemedia/Shutterstock; page 26: (top right) Fotolia; page 28: Monkey Business Images/Shutterstock; page 41: (top) Iodrakon/Shutterstock; page 41: (bottom right) Shutterstock; page 45: Rido/Shutterstock; page 46: Mike Flippo/Shutterstock

Chapter 2

Page 79: (top) Djordje Radivojevic/Shutterstock; (middle right) Amasterphotographer/Shutterstock; (bottom left) Edyta Pawlowska/Shutterstock; page 80: (top left) Denis Vrublevski/Shutterstock; page 80: (bottom left) Lithian/Shutterstock; page 83: Monkey Business Images/Shutterstock; page 84: Iodrakon/Shutterstock; page 93: Shutterstock

Chapter 3

Page 141: (top) Ragnarocks/Fotolia; (middle right) Brand X Pictures/Stockbyte/Getty Images; (bottom left) Yuri Arcurs/Fotolia; page 142: (top right) Illustrart/Fotolia; (bottom) Lisa F. Young/Shutterstock; page 151: Rido/Shutterstock

Chapter 4

Page 207: (top) Dimedrol68/Shutterstock; (middle right) Njaj/Shutterstock; (bottom left) Mountainpix/Shutterstock; page 208 (top right) Andrew Buckin/Shutterstock; page 214: Mike Flippo/Shutterstock; page 219: Lithian/Shutterstock

Chapter 5

Page 270: (top) Wasanajai/Shutterstock; (middle left) R. Gino Santa Maria/Shutterstock; (bottom right) Pavelbendov/Fotolia; page 271: (top right) Eimantas Buzas/Shutterstock; (middle right) Diana Taliun/Shutterstock; page 273: Monkey Business Images/Shutterstock; page 276: Iodrakon/Shutterstock

Chapter 6

Page 348: (top) Ari N./Shutterstock;(middle left) K. Miri Photography/Shutterstock (bottom right) Blend Images/Alamy; p. 349: (top right) Tritooth/Fotolia; (middle right) Steshkin Yevgeniy/Shutterstock; page 361: Shutterstock

Chapter 7

Page 398: (top) Todd Taulman/Shutterstock; (middle left) Eric Gevaert/Shutterstock; (bottom right) Michaeljung/Shutterstock; page 399: (middle right) Krungchingpixs/Shutterstock; page 410: Rido/Shutterstock

Chapter 8

Page 447: (top) Jmiks/Shutterstock; (middle right) Nenetus/shutterstock; (bottom left) Andresr/ Shutterstock; Artjazz/Shutterstock; page 448: (top right) Photobac/Shutterstock; page 456: Mike Flippo/Shutterstock; page 460: Lithian/Shutterstock

Chapter 9

Page 498: (top) J. Helgason/Shutterstock; (middle left) Kjpargeter/Shutterstock; (bottom right) Dmitry Kalinovsky/Shutterstock; page 499 (middle right) JPL Designs/Shutterstock; page 511: Monkey Business Images/Shutterstock; page 522: Iodrakon/Shutterstock; page 524: (bottom right) Mim Friday/Alamy

Chapter 10

Page 547: (top) Iodrakon/Shutterstock; (middle right) Bambuh/Shutterstock; (bottom left) Peter Bernik/Shutterstock; page 528: (top right) Jeka84/Shutterstock; page 554: Monkey Business Images/Shutterstock

Chapter 11

Page 579: (top) Y.H. Lim/Alamy; (middle right) Elisanth/Shutterstock; (bottom left) Carlo Dapino/Shutterstock; page 580: (top right) Pan Xunbin/Shutterstock; page 587: Shutterstock

Chapter 12

Page 620: (top) Albachiaraa/Fotolia; (middle right) arfo/Fotolia; (bottom right) PeopleImages.com/Getty; page 621: (top right) Shutterstock; (middle right) Alex Staroseltsev/Shutterstock; page 624: Mike Flippo/Shutterstock; page 628: Lithian/Shutterstock

Chapter 13

Page 669: (top) AG-Photos/Shutterstock; (middle right) Nuttapong/Shutterstock; (bottom left) StockLite Shutterstock; page 670: (top right) David Castillo DominiciShutterstock; page 673: Rido/Shutterstock

Chapter 14

Page 722: (top) Nielskliim/Shutterstock; (middle left) Kongsky/Shutterstock; (bottom right) HomeArt/Shutterstock; page 723: (top right) Aaron Amat/Shutterstock; (middle right) Sean Gladwell/Shutterstock; page 731: Iodrakon/Shutterstock; page 746: Shutterstock

Chapter 15

Page 788: (top) Get4net/Fotolia; (middle left) Rangizzz/Fotolia; (bottom right) Imagemore Co. Ltd./Alamy; page 789: (middle right) Pokomeda/Shutterstock; page 795: Lisa F. Young/Shutterstock

Appendix C

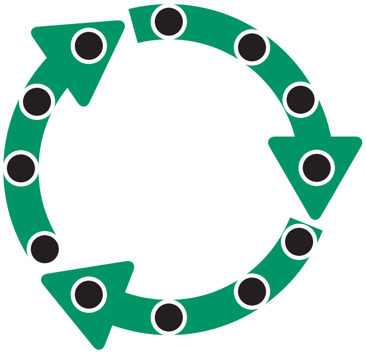
Page 901: (top) Zhukov Oleg/Shutterstock; (middle right) Vincent Pen/Fotolia; (bottom left) Nat Ulrich/Shutterstock; page 902: (top right) Djama/Fotolia

This page intentionally left blank

Prepare, Apply, and Confirm

- **Enhanced eText Features**—Keep students engaged in learning on their own time, while helping them achieve greater conceptual understanding of course material through author-created solutions videos, opportunities to Try It!, and live exhibits.

- **Accounting Cycle Tutorial**—Accessed by computer, smartphone, or tablet, provides students with brief explanations of each concept of the accounting cycle through engaging videos and/or animations.



- **Dynamic Study Modules**—Work by continuously assessing student performance and activity, then using data and analytics to provide personalized content in real time to reinforce concepts that target each student's particular strengths and weaknesses.

- **Animated Lectures**—Pre-class introduction to or post-class refresher of key concepts throughout the chapter. These audio and animated lectures explain critical information and provide worked problems that students can view on their own time at their own pace.

with MyAccountingLab®

- **Hallmark Features**—Personalized Learning Aids, like Help Me Solve This, Demo Docs, and instant feedback are available for further practice and mastery when students need the help most!

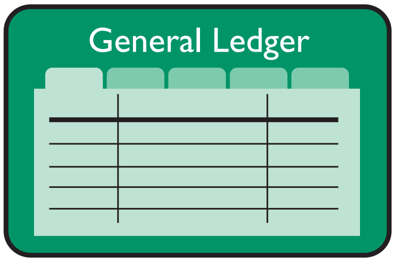
- **Learning Catalytics**—Generates classroom discussion, guides lecture, and promotes peer-to-peer learning with real-time analytics. Now, students can use any device to interact in the classroom.

- **Adaptive Study Plan**—Assists students in monitoring their own progress by offering them a customized study plan powered by Knewton, based on Homework, Quiz, and Test results. Includes regenerated exercises with unlimited practice and the opportunity to prove mastery through quizzes on recommended learning objectives.

- **Worked Solutions**—Provide step-by-step explanations on how to solve select problems using the exact numbers and data that were presented in the problem. Instructors will have access to the Worked Out Solutions in preview and review mode.

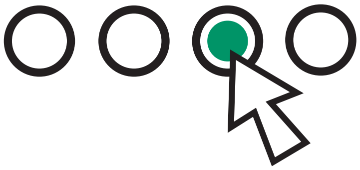
PEARSON

Prepare, Apply, and Confirm with MyAccountingLab®



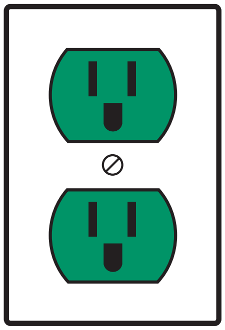
- **General Ledger**—Students can launch General Ledger software in MyAccountingLab, where they will be able to record transactions and adjusting entries, post to the ledger, close periods, and see the effects in the ledger accounts. Their work will be auto-graded, and grades will then automatically flow to the MyAccountingLab Gradebook.

- **Algorithmic Test Bank**—Instructors have the ability to create multiple versions of a test or extra practice for students.



- **Reporting Dashboard**—View, analyze, and report learning outcomes clearly and easily. Available via the Gradebook and fully mobile-ready, the Reporting Dashboard presents student performance data at the class, section, and program levels in an accessible, visual manner.

- **LMS Integration**—Link from any LMS platform to access assignments, rosters, and resources, and synchronize MyLab grades with your LMS gradebook. For students, new direct, single sign-on provides access to all the personalized learning MyLab resources that make studying more efficient and effective.



- **Mobile Ready**—Students and instructors can access multimedia resources and complete assessments right at their fingertips, on any mobile device.

ALWAYS LEARNING

PEARSON