

BRIEF EDITION

TENTH EDITION

PRACTICAL BUSINESS MATH PROCEDURES

JEFFREY SLATER



Practical Business Math Procedures

Author: David Sullivan

Editor: JEFFREY SLATER

North Shore Community College
Danvers, Massachusetts

Editor: SHARON MEYER

North Shore Community College
Danvers, Massachusetts



GIFT OF THE ASIA FOUNDATION
NOT FOR RE-SALE

QUÀ TẶNG CỦA QUỸ CHÂU Á
KHÔNG ĐƯỢC BÁN LẠI

Practical Business Math Procedures

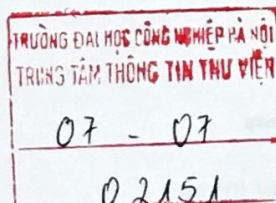
Brief Tenth Edition

JEFFREY SLATER

*North Shore Community College
Danvers, Massachusetts*

SHARON MEYER

*Pikes Peak Community College
Contributor*





The *Wall Street Journal* articles reprinted with permission of The Wall Street Journal, Dow Jones & Company, Inc. All Rights Reserved Worldwide. "Pepper . . . and Salt" cartoons in Chapter 2, page 37, © 2008; Chapter 3, page 64, © 2007 and page 72, © 2008.

Chapter 1, page 16, Adam@home cartoon © 2008, permission of Universal Press Syndicate. Chapter 1, page 2, Rhymes with Orange cartoon, © 2008, permission of King Features Syndicate. Chapter 2, page 37 Mother Goose and Grimm cartoon, © 2009, permission of King features. Chapter 4, page 88, Prickly City cartoon, © 2009, Universal Press Syndicate. Chapter 4, page 96, Rose is Rose cartoon, © 2008, permission of United Feature Syndicate. Chapter 5, page 112, FoxTrot cartoon, © 2009, permission of Universal Press Syndicate.

Kiplinger's articles reprinted by permission of *Kiplinger's Personal Finance* Magazine. Chapter 1: July, 2009. Chapter 2: August, 2009. Chapter 3: August, 2009. Chapter 4: August, 2009. Chapter 5: July, 2009. Chapter 6: August, 2009. Chapter 7: May, 2008. Chapter 8: October, 2007. Chapter 9: July, 2009. Chapter 10: July, 2009. Chapter 11: July, 2009. Chapter 12: August, 2009. Chapter 13: July, 2009. Chapter 14: August, 2009. Chapter 15: July, 2009.

PRACTICAL BUSINESS MATH PROCEDURES, BRIEF TENTH EDITION

Published by McGraw-Hill/Irwin, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY, 10020. Copyright © 2011, 2008, 2006, 2003, 2000, 1997, 1994, 1993, 1991, 1987 by The McGraw-Hill Companies, Inc. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of The McGraw-Hill Companies, Inc., including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

6 7 8 9 0 DOW/DOW 1 0 9 8 7 6 5 4 3 2

ISBN 978-0-07-732793-4 (student edition)

MHID 0-07-732793-4 (student edition)

ISBN 978-0-07-732785-9 (teacher's edition)

MHID 0-07-732785-3 (teacher's edition)

Vice president and editor-in-chief: *Brent Gordon*

Editorial director: *Stewart Mattson*

Executive editor: *Richard T. Hercher, Jr.*

Director of development: *Ann Torbert*

Managing development editor: *Gail Korosa*

Vice president and director of marketing: *Robin J. Zwettler*

Marketing director: *Sankha Basu*

Vice president of editing, design and production: *Sesha Bolisetty*

Lead project manager: *Pat Frederickson*

Lead production supervisor: *Michael R. McCormick*

Interior designer: *JoAnne Schopler*

Senior photo research coordinator: *Jeremy Cheshareck*

Photo research: *Teri Stratford*

Media project manager: *Jennifer Lohn*

Cover design: *Joanne Schopler*

Interior design: *Joanne Schopler*

Typeface: *10/12 Times Roman*

Compositor: *Aptara®, Inc.*

Printer: *R. R. Donnelley*

Library of Congress Cataloging-in-Publication Data

Slater, Jeffrey, 1947-

Practical business math procedures / Jeffrey Slater. — Brief 10th ed.
p. cm.

Includes index.

ISBN-13: 978-0-07-732793-4 (student edition : alk. paper)

ISBN-10: 0-07-732793-4 (student edition : alk. paper)

ISBN-13: 978-0-07-732785-9 (teacher's edition : alk. paper)

ISBN-10: 0-07-732785-3 (teacher's edition : alk. paper)

1. Business mathematics—Problems, exercises, etc. I. Title.

HF5694.S57 2011b

650.01'513—dc22

2009050027

ROADMAP TO SUCCESS

How to use this book and the Total Slater Learning System.

Step 1: Each chapter broken down into Learning Units. You should read one learning unit at a time.

How do I know if I understand it?

- Try the practice quiz. All the worked out solutions are provided. If you still have questions, watch the author on your DVD (comes with your text) and work each problem out.
- Need more practice? Try the extra practice quiz provided. Worked-out solutions are in Appendix B.
- Go on to next Learning Unit in chapter.

Step 2: Review the “Chapter Organizer” at the end of the chapter.

How do I know if I understand it?

- Cover over the second or third column and see if you can explain the key points or the examples.

Step 3: Do assigned problems at the end of the chapter (or Appendix A). These may include discussion questions, drill, word problems, challenge problems, video cases, as well as projects from the Business Math Scrapbook and Kiplinger’s magazine.

Can I check my homework?

- Appendix C has check figures for all the odd-numbered problems.

Step 4: Take the Summary Practice Test.

Can I check my progress?

- Appendix C has check figures for all problems.

What do I do if I do not match check figures?

- Review the video tutorial on the student DVD—the author works out each problem.

To aid you in studying the book, I have developed the following color code:



Blue: Movement, cancellations, steps to solve, arrows, blueprints



Gold: Formulas and steps



Green: Tables and forms



Red: Key items we are solving for

If you have difficulty with any text examples, pay special attention to the red and the blue. These will help remind you what you are looking for as well as what the procedures are.

FEATURES

Features students have told me have helped them the most.

Blueprint Aid Boxes

For the first eight chapters (not in Chapter 4), blueprint aid boxes are available to help you map out a plan to solve a word problem. I know that often the hardest thing to do in solving word problems is where to start. Use the blueprint as a model to get started.

Business Math Handbook

This reference guide contains all the tables found in the text. It makes homework, exams, etc. easier to deal with than flipping back and forth through the text.

Chapter Organizer

At the end of each chapter is a quick reference guide called the Chapter Organizer. Key points, formulas, and examples are provided. A list of vocabulary terms is also included, as well as Check Figures for Extra Practice Quizzes. All have page references. (A complete glossary is found at the end of the text.) Think of the chapter organizer as your set of notes and use it as a reference when doing homework problems, and to review before exams.

DVD-ROM



The DVD packaged with the text includes practice quizzes, links to Web sites listed in the Business Math Internet Resource Guide, the Excel® templates, PowerPoint, videocases, and tutorial videos—which cover all the Learning Unit Practice Quizzes and Summary Practice Tests.

The Business Math Web site

Visit the site at www.mhhe.com/slatter10e and find the Internet Resource Guide with hot links, tutorials, practice quizzes, Excel® workbook and templates, and other study materials useful for the course.

Video Cases

There are four video cases applying business math concepts to real companies such as American President Lines, FedEx, Noodles & Company and Washburn Guitars. These are included on the student DVD. Some background case information and assignment problems incorporating information on the companies are included at the end of Chapters 6, 7, 8, and 9.

Business Math Scrapbook

At the end of each chapter you will find clippings from *The Wall Street Journal* and various other publications. These articles will give you a chance to use the theory provided in the chapter to apply to the real world. It allows you to put your math skills to work.

Group Activity: Personal Finance, a Kiplinger Approach

In each chapter you can debate a business math issue based on a *Kiplinger's Personal Finance* magazine article that is presented. This is great for critical thinking, as well as improving your writing skills.

Spreadsheet Templates

Excel® templates are available for selected end-of-chapter problems. You can run these templates as is or enter your own data. The templates also include an interest table feature that enables you to input any percentage rate and any terms. The program will then generate table values for you.

Cumulative Reviews

At the end of Chapters 3 and 8 are word problems that test your retention of business math concepts and procedures. Check figures for *all* cumulative review problems are in Appendix C.

Vocabulary

On each chapter opener is a Vocabulary Preview covering the key terms in the chapter you need to know. The Chapter Organizer includes page references to the terms. There's also a glossary at the end of the text.

Acknowledgments

Academic Experts, Contributors

Eric Ball	Patrick Cunningham	Jeff Hong	Gabrielle Serrano
Ellen Benowitz	Stanley Dabrowski	Deanna Knight	Jeneen Smith Sims
Tom Bilyeu	Dorothy Dean	Amy McAnally	Margene Sunderland
Sylvia Brown	Michael Discello	Jeffrey Rabish	Leslie Thompson
Richard Bruce	Jacqueline Donovan	Stan Rickert	Judith Toland
Lisa Bryde	Mary Frey	Lawrence Roman	Patricia Tyunaitis
Charles Bunn, Jr.	Joe Hanson	Tim Samolis	Peter VanderWeyst
Linda Cress	Jennifer Herrera	Ellen Sawyer	

Special thanks to Sharon Meyer for all the help she provided in the revision of the text.

Company/Applications

Chapter 1

Dunkin' Donuts—*Problem solving*
Coca-Cola Co—*Reading, writing and rounding numbers*
Salary.com—*Rounding numbers*
Tootsie Roll Industries—*Dissecting word problems and rounding*
Flexcar/Zipcar—*Adding and subtracting whole numbers*
Starbucks—*Rounding all the way*
Hershey—*Subtraction of whole numbers*
United Airlines—*Multiplying and dividing whole numbers*
Disney, InGrid, Alarm.com, AT&T—*Applying your skills*

Chapter 2

Apple—*Fractions*
M&M's Mars—*Fractions and multiplication*
Google—*Adding and subtracting fractions*
Albertsons—*Dissecting word problems with fractions*
M&M's Mars—*Multiplying and dividing fractions*
IRS, Canyons Grand Summit, Four Seasons, Ritz Carlton, Stowe Mountain Lodge, Whiteface Lodge, Gap—*Applying your skills*

Chapter 3

Starbucks—*International currency*
American Airlines, Lufthansa—*Subtracting decimals*

Toyota—*Shortcuts for multiples of 10*
Gap, H&R Block, McDonalds, Roto-Rooter—*Applying your skills*

Chapter 4

Bank of America—*Overdraft fees*
Comerica Inc—*New social security debit cards*
Wells Fargo, Citigroup, Regions, Financial, Sun Trust, Key Corp, Fifth Third
PNC Financial, U.S. Bancorp, BB&T, Capital One—*Stress test by government*
HSBC Holdings, First National of Nebraska, ING Group—*Online banking*
Bank of America, Apple, Wells Fargo, JPMorgan Chase, Banc Plus—*Applying your skills*

Chapter 5

Google—*Formulas*
McDonald's—*International sales*
Marvel Entertainment, Scholastic Inc—*Solving for the unknown*
Webmath.com—*Applying your skills*

Chapter 6

Chrysler Corp., Toyota—*Concept of percents*
Motorola, Coca-Cola, PepsiCo, Red Bull—*Concept of percents*
IRS—*Reading percents*
Apple—*Converting percents to decimal*
M&M's Mars—*Base, rate, and portion*
National Energy Assistance Directors Association—*Percent increase and decrease*

National Association of Realtors—*Applying your skills*

Chapter 7

BillQ Plus, Rudder.com—*Insight into discounts*
Shopstyle.com, Glimpse.com, Anheuser-Busch—*Trade discounts*
McGraw-Hill Publishers—*Trade discount*
DHL, UPS, FedEx—*Freight terms*
Desa LLC—*Freight costs*
Walmart, Folcroft, Enterprise, Target, Sears Holdings—*Applying your skills*

Chapter 8

Zara, Gap—*International retailing*
Gap—*Markup on cost and selling price*
Macy's, JCPenney, Lord & Taylor—*Applying your skills*

Chapter 9

Walt Disney Co.—*Layoffs*
Walmart—*Payroll settlement*
Yum Brands, McDonald's—*Labor laws*
Goodyear Tire & Rubber Co.—*Pay scales*
IRS—*Circular E tables*
FedEx, Janus Capital Group Inc.—*Applying your skills*

Chapter 10

Quiznos, Cold Stone Creamery, Curves, Domino's Pizza—*Intro to bad loans*
Citigroup, Wachovia, Bank of America, JPMorgan Chase—*Simple interest*
Cash and More, SIM Corp., Citigroup—*Applying your skills*

Contents

Kiplinger's Personal Finance Magazine Subscription Form xv

CHAPTER 1	Whole Numbers: How to Dissect and Solve Word Problems	2
LU 1-1	Reading, Writing, and Rounding Whole Numbers	4
LU 1-2	Adding and Subtracting Whole Numbers	10
LU 1-3	Multiplying and Dividing Whole Numbers	14
CHAPTER 2	Fractions	34
LU 2-1	Types of Fractions and Conversion Procedures	36
LU 2-2	Adding and Subtracting Fractions	41
LU 2-3	Multiplying and Dividing Fractions	47
CHAPTER 3	Decimals	64
LU 3-1	Rounding Decimals; Fraction and Decimal Conversions	66
LU 3-2	Adding, Subtracting, Multiplying, and Dividing Decimals	71
	Cumulative Review: A Word Problem Approach—Chapters 1–3	87
CHAPTER 4	Banking	88
LU 4-1	The Checking Account	90
LU 4-2	Bank Statement and Reconciliation Process; Trends in Online Banking	93
CHAPTER 5	Solving for the Unknown: A How-To Approach for Solving Equations	112
LU 5-1	Solving Equations for the Unknown	114
LU 5-2	Solving Word Problems for the Unknown	119
CHAPTER 6	Percents and Their Applications	136
LU 6-1	Conversions	138
LU 6-2	Application of Percents—Portion Formula	143
	Video Case: American President Lines	169
CHAPTER 7	Discounts: Trade and Cash	170
LU 7-1	Trade Discounts—Single and Chain (Includes Discussion of Freight)	172
LU 7-2	Cash Discounts, Credit Terms, and Partial Payments	180
	Video Case: FedEx Logistics	201
CHAPTER 8	Markups and Markdowns	202
LU 8-1	Markups Based on Cost (100%)	204
LU 8-2	Markups Based on Selling Price (100%)	209
LU 8-3	Markdowns	215
	Video Case: Noodles & Company	232
	Cumulative Review: A Word Problem Approach—Chapters 6–8	233
CHAPTER 9	Payroll	234
LU 9-1	Calculating Various Types of Employees' Gross Pay	236
LU 9-2	Computing Payroll Deductions for Employees' Pay; Employers' Responsibilities	240
	Video Case: Washburn Guitars	255

CHAPTER 10	Simple Interest 256
LU 10-1	Calculation of Simple Interest and Maturity Value 258
LU 10-2	Finding Unknown in Simple Interest Formula 260
LU 10-3	U.S. Rule—Making Partial Note Payments before Due Date 262
CHAPTER 11	Promissory Notes, Simple Discount Notes, and the Discount Process 276
LU 11-1	Structure of Promissory Notes; the Simple Discount Note 278
LU 11-2	Discounting an Interest-Bearing Note before Maturity 281
CHAPTER 12	Compound Interest and Present Value 292
LU 12-1	Compound Interest (Future Value)—The Big Picture 293
LU 12-2	Present Value—The Big Picture 300
APPENDIX A:	Additional Homework by Learning Unit A
APPENDIX B:	Worked-Out Solutions to Extra Practice Quizzes B
APPENDIX C:	Check Figures C
APPENDIX D:	Glossary D
Index	IN-1

Because Money Matters...

**Get *Kiplinger's Personal Finance*
at a Special Low Student Rate,
Just \$1 a Month!**

Kiplinger's Personal Finance is the most trustworthy source of advice and guidance available today on managing your money: how to make and save more of it, invest it profitably, spend it wisely, make it work harder for you, and much more.

From our annual economic forecast issue to our ranking of the best mutual funds . . . from new ways to slash taxes, to the best ways to boost your credit score . . . *Kiplinger's Personal Finance* is devoted to helping you make more money and *keep more of the money you make!*

Here's your first money-saving tip: Subscribe today at the lowest rate available to students and educators: Just \$1 a month gets you 12 issues in the coming year. *You save 75% off the cover price!*

To order now, visit www.kiplinger.com/go/student

Or complete and mail the form below to the address shown. Include a check for \$12 made payable to *Kiplinger's Personal Finance*, or we can bill you later.

☐ Check for \$12 enclosed (payable to *Kiplinger's Personal Finance*) ☐ Bill me later

Name

Address

Apt. #

City

State

Zip

E-mail

**Special Low Student Rate: 12 issues (one year) for \$12—75%
off the cover price.**

**Mail completed form with payment to: *Kiplinger's Personal Finance*,
P.O. Box 3291, Harlan, IA 51593-2471**

CODE: J9MCGRAW