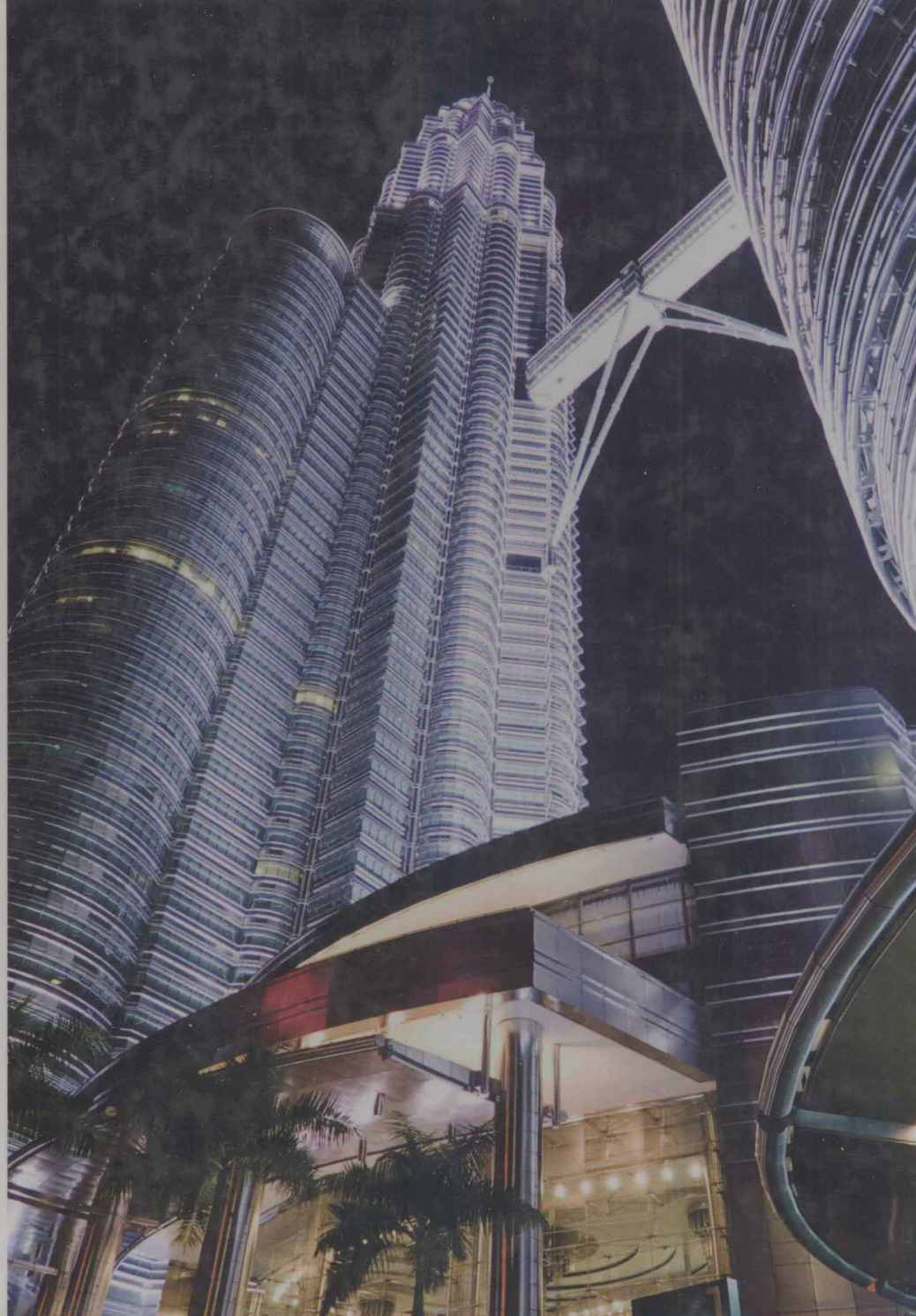


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Mathematics *for* Business

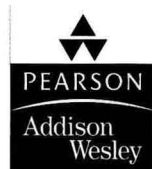
EIGHTH EDITION

Mathematics for Business

EIGHTH EDITION

Stanley A. Salzman
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	Boston	San Francisco	New York		
London	Toronto	Sydney	Tokyo	Singapore	Madrid
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Preface

The eighth edition of *Mathematics for Business* continues to provide solid, practical, and up-to-date coverage of those topics students must master to attain success in business today. More than ever, real-life examples from today's business world have been incorporated throughout the book. Many new graphs, tables, and news clippings have been added to increase the relevance of chapter content to the world students know. The globalization of our society is emphasized through examples and exercises that highlight foreign countries and international topics.

The new edition reflects the extensive business and teaching experience of the authors, as well as the suggestions of many reviewers nationwide. Providing solid, practical, and up-to-date coverage of business mathematics topics, the text begins with a brief review of basic mathematics and goes on to introduce key business topics, such as bank services, payroll, taxes, insurance, business discounts and markups, stocks and bonds, consumer loans, depreciation, financial statements, and business statistics. The text is accompanied by a greatly enhanced supplements package that provides many avenues—both print and media—for students to practice and further explore the concepts discussed in the chapters. (Please see pages xii to xiv of this preface for full descriptions of the student and instructor supplements available.)

Features

Chapter Openers

Each chapter opens with a graph, table, or headline to capture students' interest. Chapter openers use an actual business example that applies to the specific content of that chapter. See pages 125, 158.

Enhanced Treatment of Real-World Applications

The eighth edition places a greater emphasis on real-world applications. The application problems have been updated throughout the text to be as relevant as possible to today's students, and they reference well-known companies such as The Home Depot, McDonald's, Century 21, Mattel, Ace Hardware, General Motors, Nike, Bank of America, General Motors Acceptance Corporation (GMAC), Ford Motor Company, Target Corporation and the Charles Schwab Corporation. Applications are preceded by headings that highlight particular topics such as sports, vacations, and financial planning. See pages 141, 177.

Art Program

The art program of the eighth edition includes graphs and charts that utilize actual data from a variety of recognized sources. Rendered to draw student attention while emphasizing the data itself, the graphs and charts help students see that the mathematics of business is inherent to the world around them. See pages 127, 200.

'Net Assets

In each chapter, a one page feature emphasizes the continuing importance of the World Wide Web conducting in business, by showing either an actual example of a company's Internet home page or an industry related photo. The history of the company, how and where it operates, and other information is given to familiarize the student with the company. The goal is

to help the student apply the chapter topics to a real company and to provide questions that connect this material to the specific company. Some of the corporations highlighted operate solely over the Internet. This feature, suitable even for students without access to the Web, is ideal for self-contained assignments that will illustrate the relevance of business math to actual corporate situations. See pages 157, 219.

Cumulative Reviews Five Cumulative Reviews, found after Chapters 3, 7, 10, 15, and 19, help students review groups of related chapter topics and reinforce their understanding of the material. See pages 122–124, 400–402.

Metric System The metric system of measurement, found in Appendix B, gives students the information needed to understand and use the metric system. See page 813.

Financial Calculator Solutions Several financial calculator solution boxes have been added, where applicable, to demonstrate to the student how this tool can be used to solve problems. Financial calculators are also illustrated in Appendix A.2, which includes exercises that students may solve using the financial calculator of their choice. See pages 524, 535.

Quick Review with Chapter Terms The revised end-of-chapter Quick Review feature now begins with a list of key terms from the chapter and the pages on which they first appear. The Quick Review now uses a two-column format (Concepts and Examples) to help students review all the main points presented in the chapter. See pages 153, 211.


Additional Features

Numerous Exercises Mastering business mathematics requires working many exercises, so we have included more than 3750 in the eighth edition. They range from simple drill problems to real-life application exercises that require several steps to solve. All problems have been independently checked to ensure accuracy. See pages 134, 201.

Graded Application Exercises The application exercises in this text increase in difficulty level. Each even-numbered application exercise is the same type of problem as the preceding odd-numbered exercise. This allows the student to solve an odd-numbered exercise, check the answer in the answer section of the text, and then solve the following even-numbered exercise with confidence. See pages 134, 201.

Scientific Calculator Solutions Scientific calculators are covered in depth in Appendix A.1, and scientific calculator solution boxes are shown throughout the text. See pages 129, 162.

Supplementary Exercises Two sets of supplementary exercises appear in Chapter 3 and another set appears in Chapter 9. These are designed to help students review and synthesize difficult concepts. Answers to the odd-numbered supplementary exercises are located in the back of the text. See pages 97, 105.

Writing Exercises	Designed to help students better understand and relate the concepts within a section, these exercises, marked with  , require a short written answer. They often include references to a specific learning objective to help students formulate their answer. See pages 135, 177.
Pretest	A Pretest for business mathematics is included in the text's introduction. This tool helps students and instructors identify individual and class strengths and weaknesses. See pages xxvi–xxix.
Notes	These notes provide helpful suggestions to the student and are located throughout the text. See pages 172, 309.
Summary Exercises	Every chapter ends with a Summary Exercise that has been designed to help students apply what they have learned in the chapter. These problems require students to synthesize most or all of the topics they have covered in the chapter in order to solve one cumulative exercise. See pages 156, 217.
Glossary	A glossary of key words, located at the back of the book, provides a quick reference for the main ideas of the course.
Summary of Formulas	The inside covers of <i>Mathematics for Business</i> provide a handy summary of commonly used information and business formulas from the book.

Content Highlights

Chapter 1, Problem Solving and Operations with Fractions, now begins with a review of problem solving. Chapters 1 and 2 then review the basics of fractions and algebra and contain numerous drill problems.

Chapter 3 contains over 360 exercises, most of which are application problems. The wide selection of application problems offers the instructor the chance to work on the reading and comprehension skills of students while reviewing the concepts of percent.

The material in Chapter 4, Banking Services, has been updated in keeping with the latest banking trends and practices. Banking charges, online banking, the recent federal law known as Check 21, and credit card deposit slips reflect the latest available materials. The reconciliation form has been simplified once again to reflect current industry changes.

In Chapter 5, Payroll, all wages and salaries have been updated along with FICA, Medicare, and tax-withholding rates. State withholding tax has been modified to more accurately represent state income taxes throughout the nation.

In Chapter 6, Taxes, the latest available tax forms and tables have been included in Section 6.3, Personal Income Tax. In Chapter 7, Risk Management, the insurance rates for motor vehicles and life insurance have been updated to more accurately reflect today's insurance costs.

Chapter 11, Simple Interest, has been updated to reflect current interest rates, and substantial new material on inflation and the consumer price index has been added. New examples show that a raise may not be of much help to an employee, depending on the increase in the cost of living that the employee experiences.

Chapter 13, Compound Interest, has been updated, and several application problems have been changed.

Chapter 14 includes information and examples on IRAs and Roth IRAs.

Chapter 15, Business and Consumer Loans, has been updated to reflect current interest rates, and the last section of the chapter related to mortgages and loans has been updated. Many students will be able to relate easily to this section since they may be planning to buy a home or may have bought one recently.

Data from recent General Motors Corporation financial statements are included in Chapter 17, Financial Statements and Ratios, so that students learn about financial statements using actual data from a company they know.

The sections on stocks and bonds in Chapter 18, Securities and Distribution of Profit and Overhead, have been updated to reflect more current price information. Emphasis is placed on using mutual funds to save for retirement and other long-term purposes, including the education of children.

Many of the problems in Chapter 19, Business Statistics, have been changed, and a number of graphs showing data from the business world have been added to increase the chapter's sense of realism.

Appendix A.1, Scientific Calculators, contains greatly expanded coverage of scientific calculators for professors who allow students to use calculators. Appendix A.2, Financial Calculators, reviews the basic functions of financial calculators. Appendix B, The Metric System, gives students the information needed to understand and use the metric system.

Student Supplements

Business Math Review Card

- A 6-page foldout that covers basic math topics. The card also covers specific business math topics such as gross earnings, markup and markdown, and finding gross profit and gross income insurance, taxes, simple and compound interest, present value, annuities, sinking funds, stocks and bonds, depreciation, financial statements, and business statistics
ISBN: 0-321-33670-4

MathXL® Tutorials on CD

- Provides algorithmically generated practice exercises that correlate at the objective level to the content of the text
- Every exercise is accompanied by an example and a guided solution designed to involve students in the solution process
- The software provides helpful feedback for incorrect answers and can generate printed summaries of students' progress
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Instructor Supplements

Annotated Instructor's Edition

- Provides answers directly on the page to all text exercises
- An answer section at the back of both the Annotated Instructor's Edition and the student edition provides answers to the odd-numbered exercises in each section and to all chapter test exercises
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Instructor's Solutions Manual

- Provides complete solutions to all even-numbered section-level exercises
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Printed Test Bank and Instructor's Resource Guide

- Includes teaching suggestions for each chapter
- Two pretests for the course (one for basic math and one for business math)
- Four short-answer and two multiple-choice test forms per chapter
- Two final exams
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The Addison-Wesley Math Adjunct Support Center is staffed by qualified mathematics instructors with over 50 years of combined experience at both the community college and university level. Assistance is provided for faculty in the following areas:

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- Tips on using materials packaged with your book
- Book-specific content assistance
- Teaching suggestions including advice on classroom strategies

For more information visit

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MathXL[®] is a powerful online homework, tutorial, and assessment system that accompanies your Addison-Wesley textbook in mathematics or statistics. With MathXL, instructors can create, edit, and assign online homework and tests using algorithmically generated exercises correlated to your textbook. All student work is tracked in MathXL's online gradebook. Students can take chapter tests in MathXL and receive personalized study plans based on their test results. The study plan diagnoses weaknesses and links students directly to tutorial exercises for the objectives they need to study and retest.

MyMathLab

MyMathLab is a series of text-specific, easily customizable online courses for Addison-Wesley textbooks in mathematics and statistics. MyMathLab is powered by CourseCompass[™]—Pearson Education's online teaching and learning environment—and by MathXL—our online homework, tutorial, and assessment system. MyMathLab gives instructors the tools they need to deliver all or a portion of their course online, whether students are in a lab setting or working from home. MyMathLab provides a rich and flexible set of course materials, featuring free-response exercises that are algorithmically generated for unlimited practice and mastery. Instructors can use MyMathLab's homework and test managers to select and assign online exercises correlated directly to the textbook, and they can import TestGen tests into MyMathLab for added flexibility. MyMathLab's online gradebook—designed specifically for mathematics and statistics—automatically tracks students' homework and test results and gives the instructor control over how to calculate final grades. Instructors can also add offline (paper-and-pencil) grades to the MathXL gradebook. MyMathLab is available to qualified adopters. For more information, visit our Web site at www.mymathlab.com or contact your Addison-Wesley sales representative.

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Stanley A. Salzman
 Gary Clendenen

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Introduction for Students

Success in Business Mathematics

With our growing need for record keeping, establishing budgets, and understanding finance, taxation, and investment opportunities, mathematics has become a greater part of our daily lives. This text applies mathematics to daily business experience. Your success in future business courses and pursuits will be enhanced by the knowledge and skills you will learn in this course.

Studying business mathematics is different than studying subjects such as English or history. The key to success is regular practice. This should not be surprising. After all, can you learn to ski or to play a musical instrument without a lot of regular practice? The same is true for learning mathematics. Working problems nearly every day is the key to becoming successful. Here are some suggestions to help you succeed in business mathematics:

1. **Attend class regularly. Pay attention to what your instructor says and does, and take careful notes.** Note the problems the instructor works on the board and copy the complete solutions. Keep these notes separate from your homework to avoid confusion.
2. **Don't hesitate to ask questions in class.** Asking questions is not a sign of weakness, but of strength. There are always other students with the same question who are too shy to ask.
3. **Read your text carefully.** Many students read only enough to get by, usually only the examples. Reading the complete section will help you to be successful with the homework problems. As you read the text, work the example problems and check the answers. This will test your understanding of what you have read. Pay special attention to highlighted statements and those labeled "Note."
4. **Before you start on your homework assignment, rework the problems the instructor worked in class.** This will reinforce what you have learned. Many students say, "I understand it perfectly when you do it, but I get stuck when I try to work the problem myself."
5. **Do your homework assignment only after reading the text and reviewing your notes from class.** Estimate the answer before you begin working the problem in the text. Check your work before looking at the answers in the back of the book. If you get a problem wrong and are unable to see why, mark that problem and ask your instructor.
6. **Work as neatly as you can using a pencil, and organize your work carefully.** Write your symbols clearly, and make sure the problems are clearly separated from each other.
7. **After you have completed a homework assignment, look over the text again.** Try to decide what the main ideas are in the lesson. Often they are clearly highlighted or boxed in the text.
8. **Determine whether tutoring is available and know how to get help when needed.** Use the instructor's office hours to contact the instructor for suggestions and direction and call the Addison-Wesley Math Tutor Center (see page xiii for details).