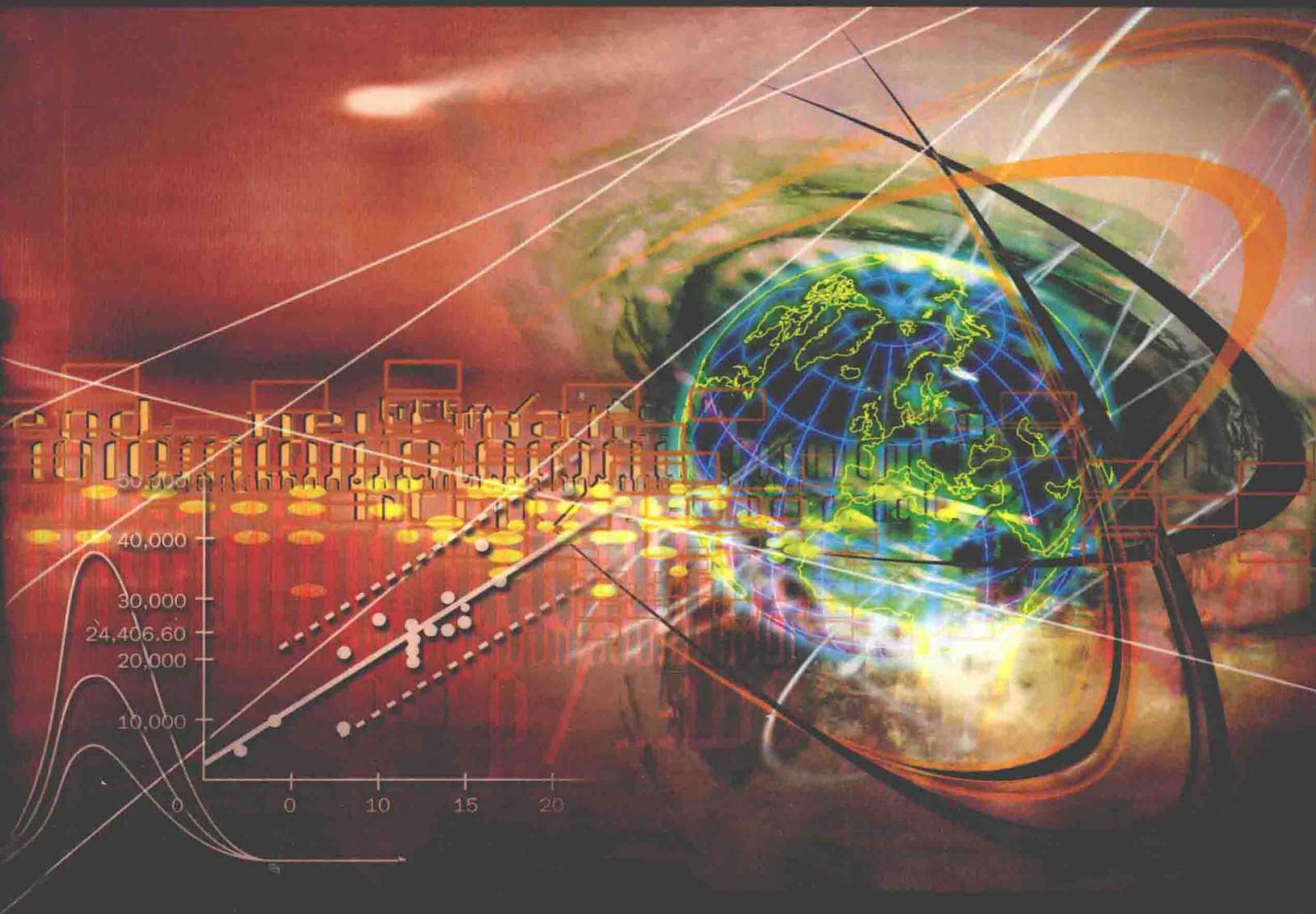


ROBERT A. BRECHNER

THIRD EDITION

Contemporary Mathematics

for Business and Consumers



THIRD EDITION

Contemporary Mathematics *for Business and Consumers*

ROBERT A. BRECHNER
MIAMI-DADE COMMUNITY COLLEGE

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SOUTH-WESTERN

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Contemporary Mathematics for Business and Consumers

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Dedication

To Shari Joy, my wife and partner.
You are a world of happiness and
celebration for me.
I can imagine no other place
for my heart!
I love you.



ABOUT THE AUTHOR

Robert A. Brechner is Professor, School of Business, at Miami-Dade Community College, the largest multi-campus community college in the country. For the past 36 years he has taught Business Math, Principles of Business, Marketing, Advertising, Public Relations, Management, and Personal Finance. He has been Adjunct Professor at Florida Atlantic University, Boca Raton, International Fine Arts College, Miami, and Florida International University School of Journalism and Mass Communications.

Bob holds a Bachelor of Science degree in Industrial Management from the Georgia Institute of Technology in Atlanta, Georgia. He also has a Masters of Business Administration from Emory University, also in Atlanta.

He consults widely with industrial companies and has published the following books: *Annuities and Sinking Funds* (Prentice Hall); *Guidelines for the New Manager* (The Dryden Press); and *A Little Math With Your Business* (The Dryden Press). Bob is a member of the American Mathematical Association of Two-Year Colleges, the National Council of Teachers of Mathematics, and the Florida Association of Community Colleges.

Bob lives in Coconut Grove, Florida, with his wife, Shari Joy. He enjoys spending his free time playing tennis, running, boating, and cooking.

Bob encourages feedback and suggestions for future editions from all those who use the text. Students and instructors can contact him toll-free at 1.888.284.MATH or by e-mail at bizmath@aol.com or via the textbook's Web site www.contemporarymath.com.

BUSINESS FIRST

Not a math book using business examples, *Contemporary Mathematics for Business and Consumers* is a business book using math to solve real-world business problems. This unique text divides each chapter into sections that contain specific Performance Objectives. These objectives reflect actual business situations, and students learn to use math to make decisions within those situations. A captivating and student-friendly style ensures student comprehension, while the abundant exercises reinforce vital material.

Razor sharp and newly updated in its third edition, *Contemporary Mathematics* is the book today's students need for success in their future business and personal financial endeavors.

**If knowledge is the currency
of the New Economy,
this is where Wealth is Created.**

—Goizueta Business School
Emory University

FEATURES OF BRECHNER, *CONTEMPORARY MATHEMATICS FOR BUSINESS AND CONSUMERS*, THIRD EDITION

Contemporary Mathematics for Business and Consumers is a 21-chapter adventure into today's business world and its associated mathematical procedures. The book is designed to provide solid math preparation and foundation for students going on to courses and careers in accounting, marketing, retailing, banking, office administration, finance, insurance, real estate, and business administration.

In addition, it is ideal for use in small businesses or for personal finance applications. This is not just a textbook but a “reference manual” for consumers and businesspersons alike. When used in conjunction with the MathCue.Business tutorial software, *Contemporary Math* becomes an even more powerful and dynamic teaching and learning tool.

The book begins with a business-oriented review of the basic mathematical operations, whole numbers, fractions, and decimals. Once students have mastered these basics, they are introduced to the concept of equations and how they are used to solve business problems. Next students learn the all-important concept of percents and how they are used in today's business jargon to express numbers and numerical changes. After percents, each subsequent chapter presents a business math topic that utilizes the students' knowledge of the basic operations, equations, and percents.

In keeping with the philosophy of “practice makes perfect,” the text contains well over 2,000 realistic business math exercises—many with multiple steps and answers—designed to prepare students to use math to make business decisions and develop critical-thinking and problem-solving skills. Consistent with AMATYC standards, many exercises ask students to make choices and then substantiate their answers in their own written words. This technique helps students visualize how what they are learning connects to real-world applications rather than simply memorizing a series of mathematical steps.

Many of the exercises in each chapter are written in a “you are the manager of” format, to enhance student involvement. The exercises cover a full range of difficulty levels, from those designed for beginners to those requiring moderate to challenge-level skills. The exercises also reflect today's diverse and ever-changing American workplace and marketplace, with increasing importance given to the service sector.

Text Organization

Chapter material is divided into Sections. Each section is then subdivided into numbered Performance Objectives. Each chapter begins with a page-referenced “contents” list of the sections and objectives to be covered. This feature gives students an overview of what lies ahead and how best to schedule their study time. This modular approach allows instructors the flexibility to customize their courses' chapter content and order of presentation to best meet the needs of their particular students.

Textual Material

Chapter material and explanations are “business-realistic” and up-to-date. They reflect current dates, products, services, names, trends, and prices. Important terminology appears in bold-faced type with complete definitions in the Marginal Glossary opposite each term. Realistic business and government forms, including tables, checks, bank statements, credit card statements, and invoices, are prevalent throughout the text.

Step-by-Step Approach

After the text explanation, the math sequence of each Performance Objective is illustrated using a step-by-step approach that is easy for students to follow and remember. These “step” elements are easily distinguishable by their highlighted design for ease in looking them up while working problems or reviewing material.

Examples with Solution Strategies

Following each step-by-step sequence is an Example problem with corresponding Solution Strategy. The Example and Solution Strategy provides a worked-out solution and example with explanation, notes to the students, and calculator sequences for difficult computations.

EXAMPLE

Jim Patterson has a revolving department store credit account, with an annual percentage rate of 18%. Jim's previous balance from last month is \$322.40. During the month, he purchased shirts for \$65.60 and a baseball bat for \$43.25. He returned a tie for a credit of \$22.95 and made a \$50 payment. If the department store uses the unpaid balance method, what is the amount of the finance charge on the account and what is Jim's new balance?

SOLUTION STRATEGY

Step 1. Periodic rate = $\frac{\text{Annual percentage rate}}{12}$

Try-It Exercises

Following each Example and Solution Strategy is a Try-It Exercise, which provides a chance for students to try the math procedure they have just learned. The worked-out solutions to the Try-It Exercises follow each chapter's summary chart. The solutions provide students with immediate feedback as to their understanding of the material and their ability to solve related math problems.

TRY-IT | EXERCISE



1. Heather Hogan has a BankCard account with an annual percentage rate of 15%. Her previous month's balance is \$214.90. During the month of July, Heather's account showed the following activity:

Everybody's Business Shortcut

“New Balance” can be calculated by adding the finance charge to the last “Unpaid Balance” of the month.

$$\$427.28 + \$3.89 = \$431.37$$

Everybody's Business

Everybody's Business provides students with helpful Learning Tips and interesting Real-World Connections. Found in the margins, these provide students with useful hints and shortcuts relating to the math procedures, as well as conceptual understanding of how the material is applied in the business world.

Calculator Sequences

Easy to read calculator sequences with icons provide students with a “walk-through” illustration of how to solve various business problems using a calculator.



Calculator Sequence: 1 \div .05 \times 6 \times 5000 $=$ 6,700.4782

Section Review Exercises

One of the most important features of this textbook is the Section Review Exercises, a comprehensive set of 25 to 50 numeric and word problems at the end of each Section. These exercises allow the student to review manageable amounts of material from only two or three Performance Objectives as they work through the chapter, rather than having to wait until the entire chapter has been covered. Section Review Exercises allow the instructor the flexibility to assign homework or class practice problems without having to complete the whole chapter.

REVIEW EXERCISES | CHAPTER 13—SECTION I

Calculate the missing information on the following revolving charge accounts. Interest is calculated on the unpaid or previous month's balance:

	Previous Balance	Annual Percentage Rate (APR)	Monthly Periodic Rate	Finance Charge	Purchases and Cash Advances	Payments and Credits	New Balance
1.	\$167.88	18%	1.5%	\$2.52	\$215.50	\$50.00	\$335.90
2.	\$35.00	12%	1%	.35	\$186.40	\$75.00	\$146.75
3.	\$455.12	21%	1.75%	7.96	\$206.24	\$125.00	\$544.32

Business Decision Exercises

BUSINESS DECISION

Pick the Right Plastic

16. On October 22, you plan to purchase a \$3,000 computer by using one of your two credit cards. The Silver Card charges 18% interest and calculates interest on the previous month's balance. The Gold Card charges 18% interest and calculates interest based on the average daily balance. Both cards have a \$0 balance as of October 1. Your plan is to make a \$1,000 payment in November, a \$1,000 payment in December, and pay off the remaining balance in January. All your payments will be received and posted on the 10th of each month. No other charges will be made on the account.

The final problem in each set of Section Review Exercises and the Assessment Test is a multi-step student involvement exercise describing an in-depth business scenario. These challenge-level problems are designed to test students' ability to apply critical thinking in a decision-making situation. Frequently, they contain material that students will encounter in later chapters.

Many of these exercises ask students to make choices and then substantiate their answers in their own written words. The Business Decision exercises can be used as Collaborative Learning Activities in class or for homework.

Formula Recap Chart

Located before the chapter summary charts, this list contains all of the important formulas used in the chapter. This recap is useful to the students as a quick reference for doing homework or reviewing for a test.

CHAPTER FORMULAS				
Periodic rate	=	Annual percentage rate		
	=	12		
Finance charge	=	Previous month's balance	×	Periodic rate
Average daily balance	=	Sum of daily balances		
	=	Days in billing cycle		
Finance charge	=	Average daily balance	×	Periodic rate
New balance	=	Previous balance	+	Finance charge
	=		+	Purchases and cash advances
	=		−	Payments and credits

* SUMMARY CHART *

SECTION I: Open-End Credit—Charge Accounts, Credit Cards, and Lines of Credit

Topic	P.O. Page	Important Concepts	Illustrative Examples
Calculating Finance Charge and New Balance by Using Previous Month's Balance Method	13–1 405	<ol style="list-style-type: none"> 1. Divide the annual percentage rate by 12 to find the monthly or periodic interest rate. 2. Calculate the finance charge by multiplying the previous month's balance by the periodic interest rate from Step 1. 3. Total all the purchases and cash advances for the month. 4. Total all the payments and credits for the month. 5. Use the following formula to determine the new balance: 	<p>Calculate the finance charge and the new balance of an account with an annual percentage rate of 15%.</p> <p>Previous month's bal = \$186.11 Purchases = \$365.77 Payments = \$200.00</p> <p>Periodic rate = $\frac{15}{12} = 1.25\%$ Finance charge = $186.11 \times .0125 = 2.33$ New balance = $186.11 + 2.33 + 365.77 - 200.00 = \\354.21</p>

Chapter Summary Chart

This extensive chart provides a comprehensive page-referenced review of each Performance Objective in the chapter. It contains a review of the important concepts, steps, and formulas for every topic, with a new illustrative example and worked-out solution for each topic. It is an invaluable tool for the student to use in learning and reviewing the chapter material or studying for an exam.

Assessment Tests

This section provides a comprehensive set of exercises. As with the Section Review Exercises, these are business-realistic in nature and are designed to promote critical-thinking and problem-solving ability. Many of these problems have multiple parts that build on previous answers and previously learned material.

Name _____

Class _____

Answers

3. \$4.46
\$724.12
4. \$724.12
\$12.09
\$839.64

Grading Panels

The grading panels are found in the margins of the Assessments Tests. These answer blanks are for students to use in answering each question and instructors to use in grading student work. The grading panel is set up in a vertical list format, allowing the instructor to place an answer template next to it for easy evaluation.

The Business Math Times

Designed to stimulate students' curiosity, each chapter ends with a newspaper-style feature called *The Business Math Times*. Newly revised for the Third Edition, these pages present interesting business news, insights, and statistics; career information; Internet references; amusing quotes and cartoons; and challenging brainteasers.

Collaborative Learning Activities

In keeping with AMATYC standards, the Collaborative Learning Activities provide valuable opportunities to reinforce the concept of teamwork and polish presentation skills. Activities range from interviews to research, with emphasis on the application of mathematical concepts to real-world situations. These activities are located in Appendix A of the text.

Answers to Odd-Numbered Problems

Appendix B contains answers to the odd-numbered questions in the text. This feature allows students to easily check their progress on class assignments or homework.

CHAPTER 13 | ASSESSMENT TEST

1. Valerie Mebust's revolving charge account has an annual percentage rate of 16%. The previous month's balance was \$345.40. During the current month, Valerie's purchases and cash advances amounted to \$215.39, and her payments and credits totaled \$125.00.

a. What is the monthly periodic rate of the account?

$$\text{Periodic rate} = \frac{16\%}{12} = 1.33\%$$

b. What is the amount of the finance charge?

$$345.40 \times 1.33\% = \$4.59$$

c. What is Valerie's new balance?

All the Math That's Fit to Learn

Volume XIII

Consumer and Business Credit

One Dollar

1,562 Hippos!
A billion credit cards combined would

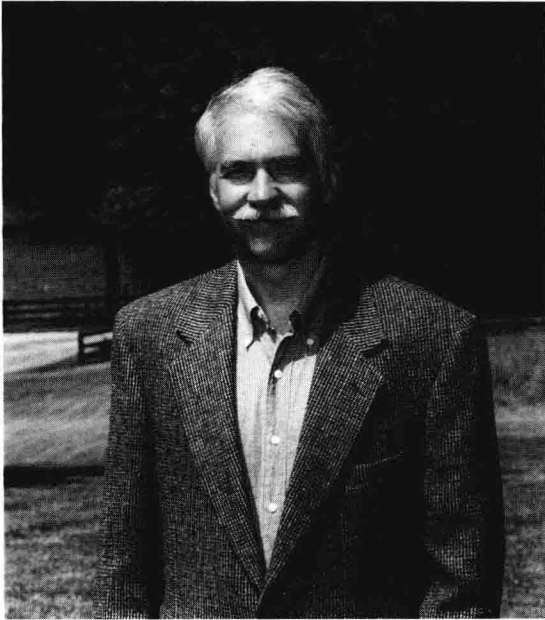
"Quote . . . Unquote"
Education is when you read the fine print.
Experience is what you get if you don't.
—Peter Dinklage

Debt is writing in reverse.
—Peter Lynch

SERVICES. Today, credit cards are accepted at more than 23 million locations in more than 300 countries.

parking meters, pay for a Big Mac, or use them to make pay phone calls.
In Germany, most citizens have a

ABOUT THE AUTHOR OF MATHCUE.BUSINESS



The author of numerous software packages, George Bergeman has taught mathematics for more than 25 years. His teaching career began at a small college in West Africa as a Peace Corps volunteer and continues at Northern Virginia Community College, one of the largest multi-campus community colleges in the country. Teaching awards have included Faculty Member of the Year honors at his campus.

In 1983, George developed a small program for use in statistics classes. Students and instructors responded positively, and in 1985 an expanded version was published along with an accompanying workbook.

Since then, George has developed a variety of software packages to accompany texts in statistics, calculus, developmental mathematics, finite mathematics, and a special favorite—Bob Brechner's *Contemporary Mathematics for Business and Consumers*. By drawing upon his teaching experiences and day-to-day contact with students and faculty, he has endeavored to develop software that provides targeted, effective, and easy-to-use support for instruction.

George lives with his wife, Clarissa, near Washington, DC, and they have one daughter, Jessica, now living in San Francisco. In his free time, he enjoys accompanying his wife and their dog to dog shows, and he flies an ultralight airplane.

MathCue.Business WITH INTERNET-BASED COURSE MANAGEMENT—FREE—WITH EACH NEW COPY OF BRECHNER, *CONTEMPORARY MATHEMATICS FOR BUSINESS AND CONSUMERS*, THIRD EDITION

MathCue.Business

MathCue.Business is a comprehensive software package specifically designed to accompany **Contemporary Mathematics for Business and Consumers**, Third Edition.

Developed by George W. Bergeman, who has taught math for more than 25 years and created instructional software for the last 17 years, **MathCue.Business** is both a learning and assessment tool. Instructional content is provided both on CD and on the Internet. **MathCue.Business** benefits students and instructors alike and includes these key features:

MathCue.Business Primary Modes

- **Tutorial-Practice:** Presents and scores problems and provides step-by-step solutions for each problem. Gives immediate feedback.
- **Test:** Sessions are scored only after they are finished. *Not only does the software create, display, and grade problems, it also shows students how to solve any questions that they missed.* Use for practice tests, tests, retests, and testing to mastery.

Both **Tutorial-Practice** and **Test** modes randomly generate large numbers of problems keyed to performance objectives in the text. Sessions are easily customized to include problems from one or more performance objectives in order to provide highly targeted tutorial sessions and various types of tests.

Customized session setups may be saved and later used repeatedly to generate multiple problem sets. Because the problems are randomly generated, each session is unique.

Extremely detailed score summaries are provided for each session.

Exclusive MathCue.Business Tool

- **Solution Finder:** Students *enter their own* basic math problems and receive step-by-step help. Solution Finder simulates the experience of asking a tutor how to solve a problem and receiving a complete explanation.

Optional Internet-Based Course Management

- **MathCue.Business Syllabus:** Allows instructors to schedule a sequence of customized, highly targeted sessions.
- **MathCue.Business Grade Book:** Automatically tracks student progress. The grade book includes a listing of session grades for all students in a section and session-by-session details of each student's work. An item analysis feature facilitates assessment of class-wide strengths and weaknesses. Instructors may specify various grading options.
- **MathCue.Business Communications:** Facilitates instructor-student communication. Instructors may send messages to an entire class or to selected groups or individuals.

The **Student Version** and the new **Internet-Based Course Management System** offer a wide variety of instructional options. Some instructors prefer to use the software for informal tutoring while others create a complete, customized tutoring and testing environment that takes full advantage of the electronic **Syllabus** and **Grade Book** features in **MathCue.Business**.

MathCue.Business Tutorial-Practice and Test Modes

MathCue.Business is a targeted, customizable tool for both learning and assessment.

MathCue.Business Solution Finder

You have selected 23 problems from Chapter 13

Select a chapter: 13. Consumer and Business Credit (Repeat as desired)

Enter the desired number of problems from each objective (Double click to edit)

Performance Objective	# Probs
13-1 Calculating Finance Charge and New Balance by the Unpaid or Previous Month's Balance Method	4
13-2 Calculating Finance Charge and New Balance by the Average Daily Balance Method	3
13-3 Calculating the Finance Charge and New Balance of Business and Personal Lines of Credit	3
13-4 Calculating the Total Deferred Payment Price and the Amount of Finance Charge of an Installment Loan	2
13-5 Calculating the Amount of the Regular Monthly Payments of an Installment Loan by the Add-on Interest Method	0
13-6 Calculating the Annual Percentage Rate of an Installment Loan by APR Tables and by Formula	3
13-7 Calculating the Finance Charge and Monthly Payment of an Installment Loan Using the APR Tables	4

Clear selections for this chapter Use default counts for this chapter

Scramble Problems Tutorial-Practice Test Clear Setup

Tutorial-Practice: Ch. 13

8 of 40

Back Up Next Problem Solution Step 1 Next Step Finish & Review

Special Instructions

Enter answer here, then click Submit.

Submit

You have a revolving credit account at an annual percentage rate of 12%. Use the average daily balance method to find your new balance given the following statement of account:

STATEMENT OF ACCOUNT Billing cycle: January 1 - 31

Dates	Number of Days	Activity/Amount	Unpaid Balance	Daily Balance
January 1		Previous month's balance	\$271.13	
January 4		Payment	47.30	
January 8		Yo Yogurt (credit)	37.59	
January 13		Candy Country	117.28	
January 18		JAB Consulting	33.74	
January 1-3	3	Previous balance	271.13	813.39
January 4-7	4	Payment -47.30	223.83	895.32
January 8-12	5	Credit -37.59	186.24	931.20
January 13-17	5	Charge +117.28	303.52	1,517.60
January 18-31	14	Charge +33.74	337.26	4,721.64
	31 days in cycle		Total	\$8,879.15

Total the number of days and the daily balances.

MathCue Score Report

Student: Chris L. Berry Date/Time: 8-Feb-02 9:41 AM [GMT-5 hrs]
ID: 3881 Duration: 38 minutes
Class: Bus 121 03

Section	Performance Objective	Number of Problems	Number Tried	# Right 1st Try	# Right 2nd Try	% Right 1st Try
12-I	12-1	3	3	3	0	100.0
12-I	12-2	3	3	3	0	100.0
12-II	12-5	4	4	3	1	75.0
12-III	12-7	4	4	3	0	75.0
13-I	13-1	3	3	3	0	100.0
13-I	13-2	4	4	4	0	100.0
13-II	13-4	4	4	3	1	75.0
Totals		25	25	22	2	88.0
		Score, including 1/2 credit for 2nd tries				92.0

E-Mail Scores

Create customized *Practice Test* or *Test* sessions by specifying the exact number of problems desired from each Performance Objective.

Objectives can be included or excluded as appropriate.

Grading panel tracks session progress.

A complete step-by-step solution is provided for every problem. (In test mode, the solutions are given after the test is completed.)

Extremely detailed results summaries help both students and instructors evaluate proficiency.

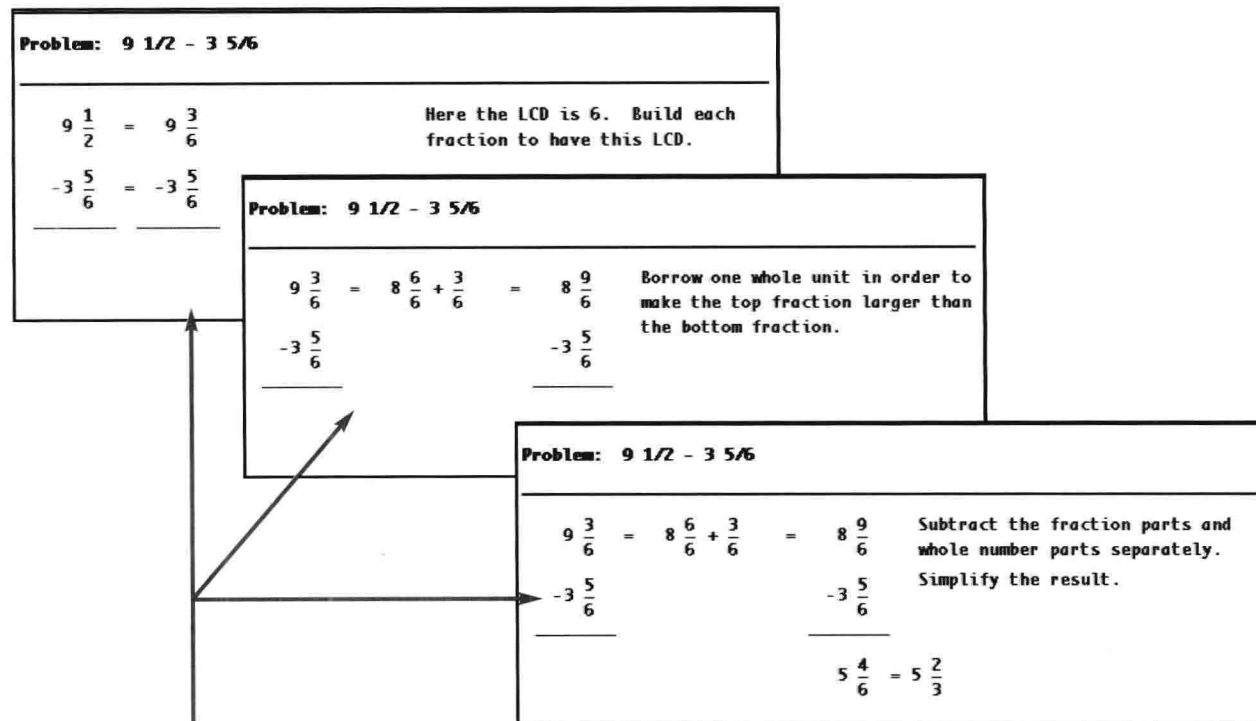
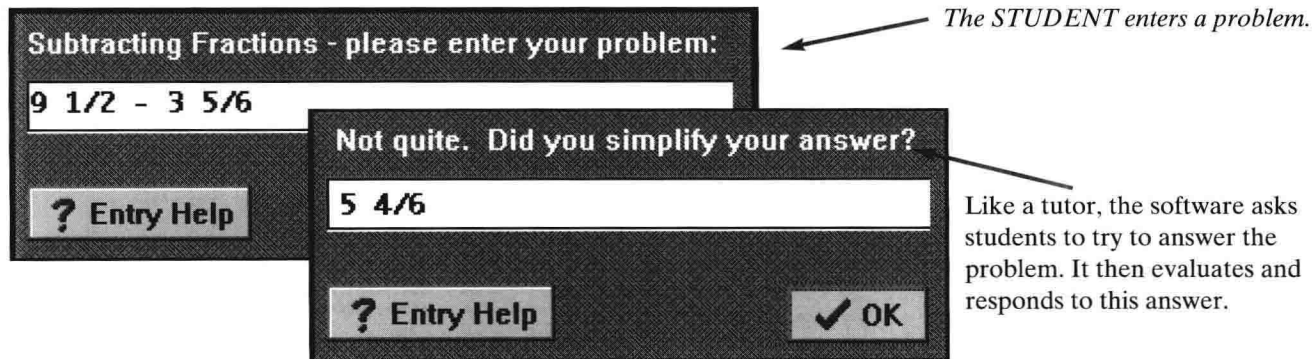
E-mail scores to the instructor.

MathCue.Business Solution Finder

MathCue.Business Solution Finder lets *students ask the questions*. This unique, built-in tool allows students to enter their own basic math problems and receive step-by-step help as if they were working with a tutor. **Solution Finder** is especially helpful to students who can't find a tutor or are reluctant to reveal their confusion to another person.

Students use **Solution Finder** for help solving a variety of basic math problems. Furthermore, as they proceed through their course, **Solution Finder** serves as a personal coach when students need help reviewing fundamental skills that are incorporated in more advanced topics.

Solution Finder is automatically disabled during testing.



Solution Finder displays a full solution with a complete step-by-step explanation to the problem entered by the student.

MathCue.Business Internet Course Management

Instructors use the optional **MathCue.Business Course Management Version** to manage their classes and to schedule and track customized *Tutorial-Practice* and *Test* sessions. Features include:

MathCue.Business Syllabus allows instructors to create and schedule customized sessions:

- Each session may include problems from any combination of performance objectives.
- Instructors specify mode (*Tutorial-Practice* or *Test*), grading weight, date available, due date, and late penalties.

MathCue.Business Grade Book automatically tracks students' results.

- Drill-down grade reports include *Class Overviews*, *Student Grade Summaries* showing a record of each student's session-by-session work, and *Session Results* showing the details of each individual session.
- Instructors specify grading preferences and may override grades.
- Statistical summaries, sorting, and item analysis options help instructors evaluate results.

MathCue Course Management

Brechner: Contemporary Mathematics for Business and Consumers, 3rd Ed.

Course/Section Roster Communications Grading Categories & Profs Syllabus Grade Book Help

Gradebook For: BUS 101-01: Business Mathematics

Click Col Headers to Sort Toggle ID

Name	Local ID	Wt. Avg.	TP 5-2 to 5-5	TP 6-1 and 6-2	TP 6-3 to 6-6	TP 6-6 to 6-8	Test-Chps 5,6	TP 7-1 and 7-2
Berry, Chris M.	372237234	92.2	95.0	85.0	90.0	97.5	96.0	50.0
Brimm, Elizabeth A.	235589611	80.7	87.5	85.0	87.5	95.0	76.0	80.0
Buchanan, Amanda Y.	341528213	91.1	80.0	95.0	100.0	92.5	88.0	100.0
Crum, Don D.	434621418	73.1	82.5	65.0	77.5	70.0	64.0	80.0
Dalton, Chris K.	329176689	85.2	82.5	80.0	85.0	85.0	88.0	82.0
Dimarzio, Laura M.	353805599	79.7	92.5	75.0	82.5	87.5	80.0	88.0
Ellis, Heidi N.	671839932	82.6	80.0	85.0	90.0	77.5	80.0	80.0
Esquerro, Jorge T.	87309551	97.2	95.0	95.0	97.5	95.0	96.0	96.0
Fine, Carl K.	523931121	73.5	62.5	75.0	77.5	82.5	80.0	78.0
High Score		97.2	95.0	95.0	100.0	97.5	96.0	100.0
Low Score		73.1	62.5	65.0	77.5	70.0	64.0	50.0
Median		83.9	85.0	85.0	86.3	87.5	84.0	81.0
Mean		84.4	85.0	83.5	87.0	87.0	84.0	82.2
Std. Dev.		8.0	9.9	10.0	7.6	8.6	10.0	13.5

Click Cell For Details

Refresh Item Analysis

Click in score grid to enter manual grades

Click on any heading to sort scores based on that heading.

Summary statistics aid in analyzing results.

Drill down to see the grade summary for any individual student.

An *Item Analysis* shows how the class as a whole performs on each performance objective in a session.

MathCue Course Management

Brechner: Contemporary Mathematics for Business and Consumers, 3rd Ed.

Course/Section Roster Communications Grading Categories & Profs Syllabus Grade Book Help

Gradebook For: BUS 101-01: Business Mathematics

Item Analysis for Assignment: Test-Chps 5,6 No. of Scores: 22

Performance Objective	Number of Problems	% Correct 1st Try	Graph of % Correct 1st Try	% Correct 2nd Try	% Not Answered
5-2	2	77%		0%	0%
5-3	2	88%		0%	4%
5-4	2	71%		8%	4%
5-5	2	71%		4%	8%
6-1	2	88%		8%	4%
6-2	2	88%		4%	8%
6-3	2	92%		0%	8%
6-4	2	71%		8%	8%
6-5	2	75%		4%	8%
6-6	2	72%		8%	12%
6-7	2	25%		8%	8%
6-8	3	77%		9%	6%

Back to Gradebook

Supplements to Accompany *Contemporary Mathematics*

The learning package provided with *Contemporary Mathematics* was specifically designed to meet the needs of instructors facing a variety of teaching conditions and to enhance students' experience of the subject. We have attempted to address both the traditional and the innovative classroom environment by providing an array of quality, fundamental, and technologically advanced items to bring a contemporary, real-world feel to the study of business mathematics.

At <http://brechner.swcollege.com> Students and Instructors Will Find:

- An additional set of comprehensive homework or extra credit assignments for each chapter. These problems are designed to supplement and enhance the student's business math learning experience.
- Additional information and links related to the textbook topics including math basics, banking and financial services, marketing, accounting, insurance, taxes, and investments.
- The latest payroll and tax tables and charts from the Internal Revenue Service can be downloaded from this site.
- An extensive Research Library is included with links to major business and financial news organizations, business and computer publications, government departments, and research sites that give students and professors access to the latest business news.
- Business Careers contains links to sites providing career advice and employment information, sample employment tests, as well as homework help and study tips.
- Links to mathematical games and other fun and challenging math activities.

For Instructors Only:

- In addition to being available on a CD-ROM, the Instructor's Resource Database is available for download from the instructor's site.
- PowerPoint Solutions to all Section Review Exercises in the text will be included.
- Excel Templates with Answers.

Online Course Management Software

Go beyond the classroom with WebTutor. It offers in-depth content with concept presentations, flashcards, audio clips, Internet links, discussion questions, and tutorials. An internal e-mail system, chat and discussion areas, search capabilities, calendars, custom printing features, and instructor customization options provide an unparalleled level of functionality. Visit <http://www.swcollege.com/elearning.html> for more information.

Annotated Instructor's Edition of *Contemporary Mathematics* (ISBN 0-324-18588-X)

This valuable teaching aid includes annotated worked-out solutions for all problems and exercises as well as helpful marginal teaching notes and collaborative learning activities. These annotations appear in blue for clarity and ease of duplication. An icon in the margin highlights references to teaching and solution transparencies.

Student Resource Manual (ISBN 0-03-035478-1)

This supplement is available as a recommended support item for students. It contains reproductions of tables, charts, and formulas from the text for easy reference during tests or comprehensive reviews. It also contains additional material on business measurements, the metric system, and international applications, including currency conversion and import/export issues. More than 400 additional review exercises cover each chapter in the main text, providing another source of practice problems. This manual can be ordered at a minimal cost

through the bookstore as a stand-alone supplement or shrinkwrapped with the text. The third edition SRM also includes a calculator workbook of a 10-key or financial calculator. Practice problems are included.

PowerPoint Solutions (ISBN 0-03-035463-3)

The worked-out solutions to all of the Section Review Exercises are available on PowerPoint slides, as well as on transparencies. This gives the instructor the option of going over the solutions to these exercises electronically in class or making the slides available to the students in a lab for them to check their work on their own time. The Third Edition PowerPoint slides also include chapter outlines and key concepts for classroom lectures.

Chapter 2, Section II

Review Exercises

Find the least common denominator for the following groups of fractions:

1. $\frac{4}{5}, \frac{2}{3}, \frac{8}{15}$

3	5	3	15
5	5	1	5
	1	1	1

$3 \times 5 = 15$ LCD

2. $\frac{1}{3}, \frac{4}{9}, \frac{3}{4}$

3	3	9	4
2	1	3	4
3	1	3	2
2	1	1	2
1	1	1	1

$3 \times 2 \times 3 \times 2 = 36$ LCD

3. $\frac{5}{6}, \frac{11}{12}, \frac{1}{4}, \frac{1}{2}$

2	6	12	4	2
2	3	6	2	1
3	3	3	1	1
1	1	1	1	1

$2 \times 2 \times 3 = 12$ LCD

LCD

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Chapter 2, Section III

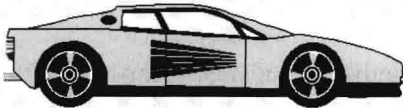
32. An automobile travels 365 miles on $16\frac{2}{3}$ gallons of gasoline.

A. How many miles per gallon does the car get on the trip?

$$= \frac{365}{16\frac{2}{3}} = \frac{365}{\frac{50}{3}} = \frac{365 \times 3}{50} = \frac{1095}{50} = 21\frac{9}{10} \text{ Miles per gallon}$$

B. How many gallons would be required for the car to travel 876 miles?

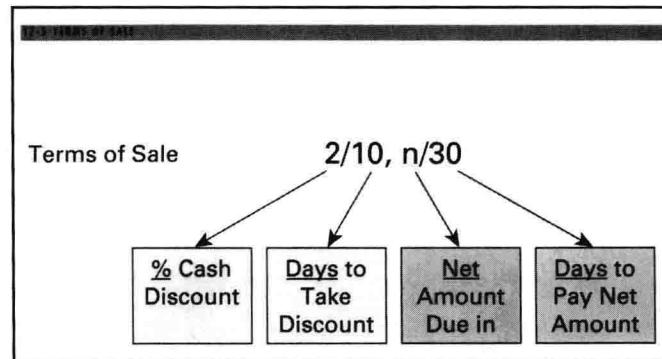
$$= \frac{876}{21\frac{9}{10}} = \frac{876}{\frac{219}{10}} = \frac{876 \times 10}{219} = \frac{8760}{219} = 40 \text{ Gallons}$$



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Teaching (ISBN 0-03-035486-2) and Solutions (ISBN 0-03-035471-4) Transparency Acetate Package

Available in acetate form are more than 200 two- and four-color **teaching transparencies** derived from figures, exhibits, and Try-It Exercises in the text. These provide an easy display format to reinforce important concepts.



Also provided are **solution transparencies** keyed to the review exercises in each chapter. Icons in the Annotated Instructor's Edition indicate where the transparencies should be used during lecture.

TEST: CALCULATING FUTURE VALUE OF AN ORDINARY ANNUITY (TRY IT #1 & #2)

Atlanta Savings & Loan is paying 6% interest compounded quarterly. Use Table 12-1 to calculate the future value of \$1,000, deposited at the *beginning* of every 3 months, for 5 years.

2. Periods = $20 (5 \times 4) + 1 = 21$

Rate = $\frac{6\%}{4} = 1\frac{1}{2}\%$

Table factor = $\frac{24.47052}{-1.00000}$
23.47052

Future value = Table factor \times Annuity payment

Future value = $23.47052 \times 1,000 = \$23,470.52$

b. $FV_{\text{annuity due}} = (1 + i) \times FV_{\text{ordinary annuity}}$

$FV_{\text{annuity due}} = (1 + .02) 6.074_{.34} = \$6,195.83$

Printed (ISBN 0-03-035493-5) and Computerized (ISBN 0-03-035426-9) Testing Resources

These valuable resources provide additional testing items for instructor's reference in four distinct formats. The Test Bank contains more than 2,500 problems ranging from vocabulary reviews and matching to drill and word problems. Additional multiple choice questions have been added with this edition. Each chapter has a variety of tests and practice quizzes already created for easy duplication and distribution. This Test Bank is also available in Windows software format from Thomson Learning Testing Tools™.

Instructor's Resource Database (ISBN 0-03-035441-2)

This innovative tool allows instructors to customize their teaching notes for class. Every chapter contains a general chapter outline and teaching suggestions, ideas, and problem-solving hints based on the author's 36 years of teaching experience, and suggestions from our class testers, reviewers, and users. There is also a section on using *The Business Math Times* that appears at the end of each chapter and various ways to utilize the

“Collaborative Learning Activities.” Finally, there are numerous suggestions and instructions for using the MathCue.Business Tutorial Software and the PowerPoint electronic transparencies, and incorporating video into the classroom. A new section has been added to the Third Edition “Questions Students Always Ask.” This will be especially helpful for adjunct instructors.

Spreadsheet Exercises

New for the Third Edition, these Excel exercises help students to understand the concepts presented in the text and to apply the topics in a realistic and meaningful manner. These exercises are designed to help students learn how Excel (and spreadsheets in general) can be used to perform calculations and display results in mathematical and financial contexts. In addition, they will enhance students’ problem analysis skills by requiring careful consideration of the inputs and outputs involved in a variety of business situations.

Unique to *Contemporary Mathematics for Business and Consumers*, each chapter includes Excel exercises presented at three levels of difficulty:

- ♦ **Beginner**—In Level 1 exercises, students are asked to enter the appropriate data. All formulas and labels are provided.
- ♦ **Intermediate**—In Level 2 exercises, students must determine which formulas are needed, then enter them as well as the data.
- ♦ **Advanced**—In Level 3 exercises, students demonstrate a mastery of Excel by creating all aspects of the spreadsheet from a given set of data.



Videos

There is video support to accompany this text that will bring topics to life for students, increasing their enjoyment of business math as well as their understanding. A description of our video offerings is available on our Web site.

Web Site

- ♦ Web site: <http://brechner.swcollege.com>. Our Web site provides support for both instructors and students. Features include downloadable supplements, research library, career advice, and interactive learning tools.
- ♦ Web Tutor on Blackboard (ISBN 0-324-18649-5); Web Tutor on WebCT (ISBN 0-324-18650-9): These online learning aids include discussion questions, flashcards, multiple-choice quizzes, and links to MathCue and the product support site.

Contributors to *Contemporary Mathematics*

Contemporary Mathematics for Business and Consumers benefited from the valuable input of instructors throughout the country. I would like to especially thank those who responded to our questions about how they teach business math and those who reviewed various parts of the manuscript and/or allowed this book to be tested by their classes.

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