Beginning & Intermediate ALGEBRA

ELAYN MARTIN-GAY

Custom Edition for Los Angeles Mission College

PEARSON ALWAYS LEARNING

Elayn Martin-Gay

Beginning & Intermediate Algebra

Custom Edition for Los Angeles Mission College

Taken from:
Beginning & Intermediate Algebra, Fifth Edition
by Elayn Martin-Gay

Strategies for Success: Study Skills for the College Math Student
by Lynn Marecek and MaryAnne Anthony-Smith

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Student Resources

These resources, located in the back of the text, give you a variety of tools conveniently located in one place to help you succeed in math.

Study Skills Builders

Attitude and Study Tips:

1. Have You Decided to Complete This Course Successfully?
2. Tips for Studying for an Exam
3. What to Do the Day of an Exam
4. Are You Satisfied with Your Performance on a Particular Quiz or Exam?
5. How Are You Doing?
6. Are You Preparing for Your Final Exam?

Organizing Your Work:

7. Learning New Terms
8. Are You Organized?
9. Organizing a Notebook
10. How Are Your Homework Assignments Going?

MyMathLab and MathXL:

11. Tips for Turning in Your Homework on Time
12. Tips for Doing Your Homework Online
13. Organizing Your Work
14. Getting Help with Your Homework Assignments
15. Tips for Preparing for an Exam
16. How Well Do You Know the Resources Available to You in MyMathLab?

Additional Help Inside and Outside Your Textbook:

17. How Well Do You Know Your Textbook?
18. Are You Familiar with Your Textbook Supplements?
19. Are You Getting All the Mathematics Help That You Need?

The Bigger Picture–Study Guide Outline

Practice Final Exam

Answers to Selected Exercises

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A New Tool to Help You Succeed

Introducing Martin-Gay's New Student Organizer

The new **Student Organizer** guides you through three important parts of studying effectively–note-taking, practice, and homework.

It is designed to help you organize your learning materials and develop the study habits you need to be successful. The Student Organizer includes:

- How to prepare for class
- Space to take class notes
- Step-by-step worked examples
- Your Turn exercises (modeled after the examples)
- Answers to the Your Turn exercises as well as worked-out solutions via references to the Martin-Gay text and videos
- Helpful hints and directions for completing homework assignments

A flexible design allows instructors to assign any or all parts of the Student Organizer.

The Student Organizer is available in a loose-leaf, notebook-ready format. It is also available for download in MyMathLab.

For more information, please go to

www.pearsonhighered.com/martingay

www.mypearsonstore.com

(search Martin-Gay, Beginning & Intermediate Algebra, Fifth Edition)

your Martin-Gay MyMathLab® course

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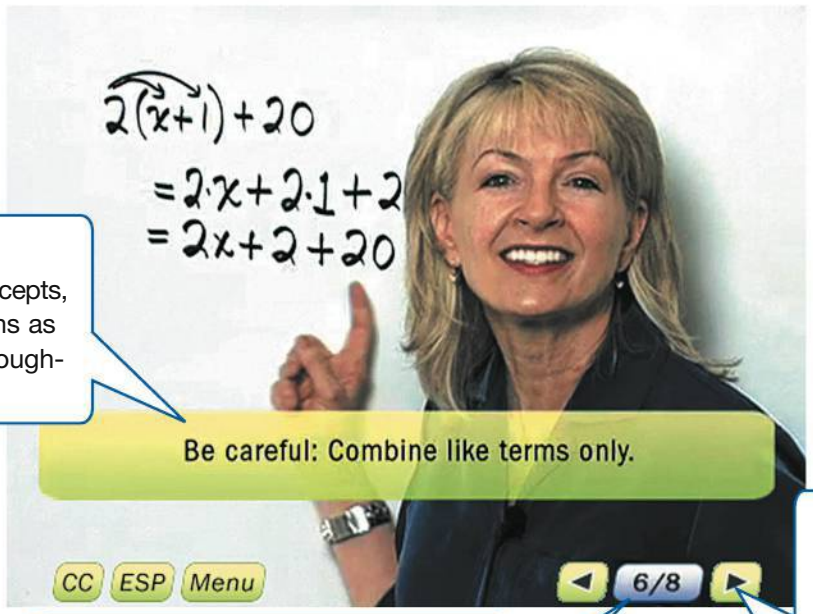
Martin-Gay Video Resources to Help You Succeed

Interactive DVD Lecture Series

Active Learning at Your Pace

Designed for use on your computer or DVD player, these interactive videos include a 15–20 minute lecture for every section in the text as well as Concept Checks, Study Skills Builders, and a Practice Final Exam.

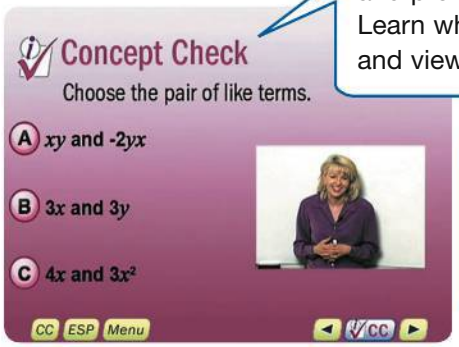


Pop-ups
Take note of key concepts, terms, and definitions as pop-ups appear throughout each section.

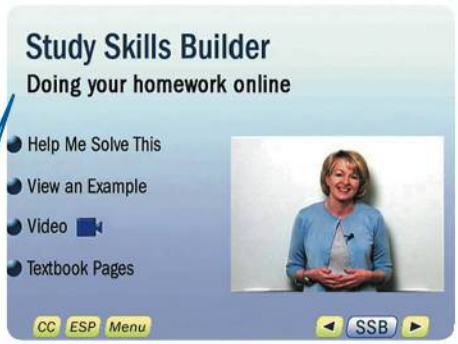
Progress Meter
Monitor your progress through the lecture and exercises at a glance.

Exercises
Know how to do an exercise? Click the "next" arrow to skip ahead or the "back" arrow to review an exercise.

Interactive Concept Checks
pose questions about key concepts and prompt you to click on an answer. Learn whether your answer is correct and view the full solution.



Study Skills Builders
provide tips and suggestions to help you develop effective study habits.



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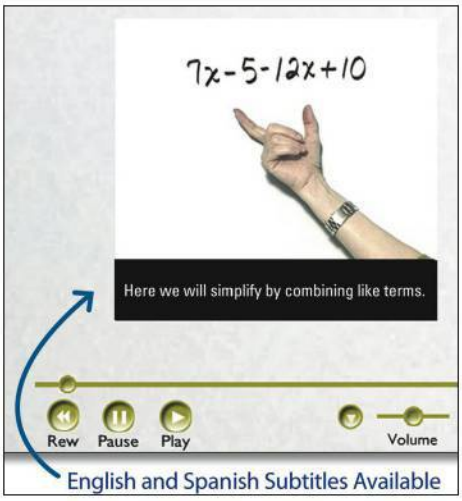
Chapter Test Prep Videos

Step-by-step solutions on video for all chapter test exercises from the text. Available via:

- Interactive DVD Lecture Series
- MyMathLab®
- YouTube™



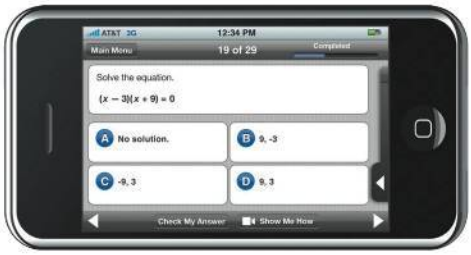
AlgebraPrep Apps for the iPhone™ and iPod Touch®

Your 24/7 Algebra Tutor–Anytime, Anywhere!

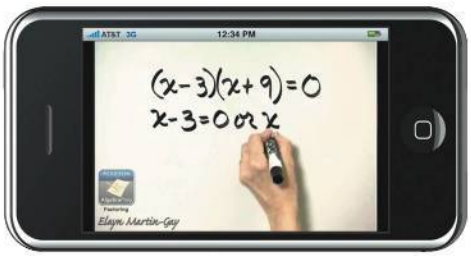
PEARSON AlgebraPrep

Available on the iPhone App Store

Choose to take a Practice Test or a MiniTest (designed to take 10 minutes or less).



Practice Test exercises provide answer feedback to help you study and self-correct.



Step-by-step video solutions give you the guidance of an expert tutor whenever you need help.

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Preface

Beginning & Intermediate Algebra, **Fifth Edition,** was written to provide a solid foundation in algebra for students who might not have previous experience in algebra. Specific care was taken to make sure students have the most up-to-date, relevant text preparation for their next mathematics course or for nonmathematical courses that require an understanding of algebraic fundamentals. I have tried to achieve this by writing a user-friendly text that is keyed to objectives and contains many worked-out examples. As suggested by AMATYC and the NCTM Standards (plus Addenda), real-life and real-data applications, data interpretation, conceptual understanding, problem solving, writing, cooperative learning, appropriate use of technology, mental mathematics, number sense, estimation, critical thinking, and geometric concepts are emphasized and integrated throughout the book.

The many factors that contributed to the success of the previous editions have been retained. In preparing the Fifth Edition, I considered comments and suggestions of colleagues, students, and many users of the prior edition throughout the country.

What's New in the Fifth Edition?

- **The Martin-Gay Program** has been revised and enhanced with a new design in the text and MyMathLab to actively encourage students to use the text, video program, and Student Organizer as an integrated learning system.
- **The Student Organizer** is designed by me to help students develop the study habits they need to be successful. This Organizer guides students through the three main components of studying effectively—note-taking, practice, and homework—and helps them develop the habits that will enable them to succeed in future courses. The Student Organizer can be packaged with the text in loose-leaf, notebook-ready format and is also available for download in MyMathLab.
- **New Vocabulary, Readiness & Video Check** questions have been added prior to every section exercise set. These exercises quickly check a student's understanding of new vocabulary words. The **readiness** exercises center on a student's understanding of a concept that is necessary in order to continue to the exercise set. **New video check questions for the Martin-Gay Interactive Lecture videos** are now included in every section for each learning objective. **These exercises are all available for assignment in MyMathLab** and are a great way to assess whether students have viewed and understood the key concepts presented in the videos.
- **The Interactive DVD Lecture Series,** featuring your text author (Elayn Martin-Gay), provides students with active learning at their own pace. The videos offer the following resources and more:

  A complete lecture for each section of the text highlights key examples and exercises from the text. New "pop-ups" reinforce key terms, definitions, and concepts.

  An interface with menu navigation features allows students to quickly find and focus on the examples and exercises they need to review.

  Interactive Concept Check exercises measure students' understanding of key concepts and common trouble spots.

  The Interactive DVD Lecture Series also includes the following resources for test prep:

  The Practice Final Exam helps students prepare for an end-of-course final. Students can watch full video solutions to each exercise.

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The Chapter Test Prep Videos help students during their most teachable moment–when they are preparing for a test. This innovation provides step-by-step solutions for the Chapter Test exercises found at the end of each chapter in the text. The videos are captioned in English and Spanish. For the Fifth Edition, the chapter test prep videos are also available on YouTube™.

- **The Martin-Gay MyMathLab course** has been updated and revised to provide more exercise coverage, including assignable video check questions, and an expanded video program. There are section lecture videos for every section, students can also access at the specific objective level, and there are an increased number of watch clips at the exercise level to help students while doing homework in MathXL. Suggested homework assignments have been premade for assignment at the instructor's discretion.
- **New MyMathLab Ready to Go courses** (access code required) provide students with all the same great MyMathLab features that you're used to, but make it easier for instructors to get started. Each course includes preassigned homework and quizzes to make creating your course even simpler. Ask your Pearson representative about the details for this particular course or to see a copy of this course.
- **A new section** (12.4) devoted specifically to exponential growth and decay and applications has been added. This section includes the definition and examples of half-life.
- **The new Student Resources** section, located in the back of the text, gives students a variety of tools that are conveniently located in one place to help them achieve success in mathematics.
  - **Study Skills Builders** give students tips and suggestions on successful study habits and help them take responsibility for their learning. Assignable exercises check students' progress in improving their skills.
  - The **Bigger Picture—Study Guide Outline** covers key concepts of the course—simplifying expressions and solving equations and inequalities—to help students transition from thinking section-by-section to thinking about how the material they are learning fits into mathematics as a whole. This outline provides a model for students on how to organize and develop their own study guide.
  - The **Practice Final Exam** helps students prepare for the end-of-the-course exam. Students can also watch the step-by-step solutions to all the Practice Final Exam exercises on the new Interactive DVD Lecture Series and in MyMathLab.
  - The **Answers to Selected Exercises** section allows students to check their answers for all Practice exercises; odd-numbered Vocabulary, Readiness & Video Check exercises; odd-numbered section exercises; odd-numbered Chapter Review and Cumulative Review exercises; and all Integrated Review and Chapter Test exercises.
- **New guided application exercises** appear in many sections throughout the text, beginning with Section 2.4. These applications prompt students on how to set up the application and get started with the solution process. These guided exercises will help students prepare to solve application exercises on their own.
- **Enhanced emphasis on Study Skills** helps students develop good study habits and makes it more convenient for instructors to incorporate or assign study skills in their courses. The following changes have been made in the Fifth Edition:

  Section 1.1, Tips for Success in Mathematics, has been updated to include helpful hints for doing homework online in MyMathLab. Exercises pertaining to doing homework online in MyMathLab are now included in the exercise set for 1.1.

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The Study Skills Builders, formerly located at the end of select exercise sets, are now included in the new **Student Resources** section at the back of the book and are organized by topic for ease of assignment. This section now also includes new Study Skills Builders on doing homework online in MyMathLab.

- All exercise sets have been reviewed and updated to ensure that even- and odd-numbered exercises are paired.

Key Pedagogical Features

The following key features have been retained and/or updated for the Fifth Edition of the text:

Problem-Solving Process This is formally introduced in Chapter 2 with a four-step process that is integrated throughout the text. The four steps are **Understand, Translate, Solve,** and **Interpret.** The repeated use of these steps in a variety of examples shows their wide applicability. Reinforcing the steps can increase students' comfort level and confidence in tackling problems.

Exercise Sets Revised and Updated The exercise sets have been carefully examined and extensively revised. Special focus was placed on making sure that even- and odd-numbered exercises are paired.

Examples Detailed, step-by-step examples were added, deleted, replaced, or updated as needed. Many of these reflect real life. Additional instructional support is provided in the annotated examples.

Practice Exercises Throughout the text, each worked-out example has a parallel Practice Exercise. These invite students to be actively involved in the learning process. Students should try each Practice Exercise after finishing the corresponding example. Learning by doing will help students grasp ideas before moving on to other concepts. Answers to the Practice Exercises are provided in the back of the text.

Helpful Hints Helpful Hints contain practical advice on applying mathematical concepts. Strategically placed where students are most likely to need immediate reinforcement, Helpful Hints help students avoid common trouble areas and mistakes.

Concept Checks This feature allows students to gauge their grasp of an idea as it is being presented in the text. Concept Checks stress conceptual understanding at the point-of-use and help suppress misconceived notions before they start. Answers appear at the bottom of the page. Exercises related to Concept Checks are included in the exercise sets.

Mixed Practice Exercises Found in the section exercise sets, each requires students to determine the problem type and strategy needed to solve it just as they would need to do on a test.

Integrated Reviews A unique, mid-chapter exercise set that helps students assimilate new skills and concepts that they have learned separately over several sections. These reviews provide yet another opportunity for students to work with "mixed" exercises as they master the topics.

Vocabulary Check Provides an opportunity for students to become more familiar with the use of mathematical terms as they strengthen their verbal skills. These appear at the end of each chapter before the Chapter Highlights. Vocabulary, Readiness & Video Check exercises also provide vocabulary practice at the section level.

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Chapter Highlights Found at the end of every chapter, these contain key definitions and concepts with examples to help students understand and retain what they have learned and help them organize their notes and study for tests.

Chapter Review The end of every chapter contains a comprehensive review of topics introduced in the chapter. The Chapter Review offers exercises keyed to every section in the chapter, as well as Mixed Review exercises that are not keyed to sections.

Chapter Test and Chapter Test Prep Video The Chapter Test is structured to include those problems that involve common student errors. The **Chapter Test Prep Videos** give students instant access to a step-by-step video solution of each exercise in the Chapter Test.

Cumulative Review Follows every chapter in the text (except Chapter 1). Each odd-numbered exercise contained in the Cumulative Review is an earlier worked example in the text that is referenced in the back of the book along with the answer.

Writing Exercises These exercises occur in almost every exercise set and require students to provide a written response to explain concepts or justify their thinking.

Applications Real-world and real-data applications have been thoroughly updated and many new applications are included. These exercises occur in almost every exercise set and show the relevance of mathematics and help students gradually, and continuously, develop their problem-solving skills.

Review and Preview Exercises These exercises occur in each exercise set (except in Chapter 1) and are keyed to earlier sections. They review concepts learned earlier in the text that will be needed in the next section or chapter.

Exercise Set Resource Icons Located at the opening of each exercise set, these icons remind students of the resources available for extra practice and support:

See Student Resources descriptions on page xviii for details on the individual resources available.

Exercise Icons These icons facilitate the assignment of specialized exercises and let students know what resources can support them.

- Video icon: exercise worked on the Interactive DVD Lecture Series and in MyMathLab.
- Triangle icon: identifies exercises involving geometric concepts.
- Pencil icon: indicates a written response is needed.
- Calculator icon: optional exercises intended to be solved using a scientific or graphing calculator.

Optional: Graphing Calculator Exploration Boxes and Calculator Exercises The optional Graphing Calculator Explorations provide keystrokes and exercises at appropriate points to give an opportunity for students to become familiar with these tools. Section exercises that are best completed by using a calculator are identified by for ease of assignment.

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Student and Instructor Resources

STUDENT RESOURCES

Student Organizer Guides students through the 3 main components of studying effectively–note-taking, practice, and homework. The organizer includes before-class preparation exercises, note-taking pages in a 2-column format for use in class, and examples paired with exercises for practice for each section. It is 3-hole-punched. Also available in MyMathLab.	**Student Solutions Manual** Provides complete worked-out solutions to • the odd-numbered section exercises; all Practice Exercises; all exercises in the Integrated Reviews, Chapter Reviews, Chapter Tests, and Cumulative Reviews
Interactive DVD Lecture Series Provides students with active learning at their pace. The videos offer: • A complete lecture for each text section. The interface allows easy navigation to examples and exercises students need to review. • Interactive Concept Check exercises • Study Skills Builders • Practice Final Exam • Chapter Test Prep Videos	**Chapter Test Prep Videos** • Step-by-step solutions to every exercise in each Chapter Practice Test. • Available in MyMathLab® and on YouTube, and in the Interactive DVD Lecture Series.

INSTRUCTOR RESOURCES

Annotated Instructor's Edition Contains all the content found in the student edition, plus the following: • Answers to exercises on the same text page • Answers to graphing exercises and all video exercises • Teaching Tips throughout the text placed at key points. • Classroom Examples in the margin paired to each example in the text.	**Instructor's Resource Manual with Tests and Mini-Lectures** • Mini-lectures for each text section • Additional Practice worksheets for each section • Several forms of test per chapter–free response and multiple choice • Group activities • Video key to the example number in the video questions and section exercises worked in the videos • Answers to all items **Instructor's Solutions Manual** **TestGen®** (Available for download from the IRC)
	Online Resources **MyMathLab®** (access code required) **MathXL®** (access code required)

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Prior to writing textbooks, Elayn Martin-Gay developed an acclaimed series of lecture videos to support developmental mathematics students in their quest for success. These highly successful videos originally served as the foundation material for her texts. Today, the videos are specific to each book in the Martin-Gay series. The author has also created Chapter Test Prep Videos to help students during their most "teachable moment"—as they prepare for a test—along with Instructor-to-Instructor videos that provide teaching tips, hints, and suggestions for each developmental mathematics course, including basic mathematics, prealgebra, beginning algebra, and intermediate algebra. Her most recent innovations are the AlgebraPrep Apps for the iPhone and iPod Touch. These Apps embrace the different learning styles, schedules, and paces of students and provide them with quality math tutoring.

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Strategies for Success

Syllabus Search **Name**_____

- **General Information**

1) My instructor's name is _____

2) I can contact my instructor by Phone: _____

Email:_____

3) My instructor's office is located in _____

4) My instructor's office hours are _____

5) Matching my schedule with my instructor's office hours, the times that I will be able to meet with my instructor are _____

6) The website address for this class is _____

7) The required textbook for this class is titled _____

and I can buy it on campus at _____

8) For this class I need a (circle one) scientific/graphing calculator such as a _____

9) Other materials I need are _____

10) The attendance policy is _____

_____

11) The cheating policy is _____

_____

12) If my cell phone goes off in class, I _____

Taken from *Strategies for Success: Study Skills for the Colllege Math Student* by Lynn Marecek and MaryAnne Anthony-Smith

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- **Course Grading Policy**

13) I plan to earn a(n) A/B/C_____ in this course.

14) The **grading scale** will be: A=_____B=_____C=_____D=_____F=_____

15) My course grade will be based on my scores on:

___	homework	___	classwork
___	quizzes	___	participation
___	tests	___	other: _____
___	final examination		_____

16) When is **homework** due? _____ How do you turn it in? _____

17) Is late homework accepted? _____ If so, is there a penalty? _____

18) Each homework assignment is worth _____ points and all homework is worth _____ points total for the course.

19) There will/will not (circle one) be **quizzes** in this class. If so, each quiz is worth _____ points and all quizzes are worth ____ points total for the course.

20) This class has _____**tests** that are scheduled on _____

21) Each test is worth _____points and all tests together contribute _____ points towards my course grade.

22) The **makeup test** policy is _____

23) The **Final Exam** is scheduled on _____and is worth _____points.

24) Other work that will contribute to my grade: _____

25) Questions for my instructor about the grading policies:

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- **Resources for this Course**

26) If I need help in this course, I can use the following resources:

1. _____

2. _____

3. _____

4. _____

27) If I need a tutor for this course, I can call _____
or go to_____

28) If I need accommodation due to a disability I need to _____
_____

29) If I need to contact a classmate from this class I would call or email

1. _____phone: _____email:_____

2. _____phone: _____email:_____

3. _____phone: _____email:_____

30) A good time for me to meet with a study group is_____

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Strategies for Success

Math Autobiography **Name**_____

We all arrived in this class by different paths. Each of us has had many experiences that have influenced our attitudes and beliefs about math and our abilities in math. This exercise will help you reflect on the past and begin to focus on the future.

1) Write your math autobiography—your life story with math. In your autobiography you should:
   (a) discuss your present attitude about math.
   (b) relate any specific experiences you have had that may have influenced your attitude about math. Think back to your earliest memories and then trace your story forward to today. (These may or may not be experiences in school.)
   (c) discuss your fears and concerns about this course.
   (d) describe your strengths and relate how they will help you as you progress through this course.

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Strategies for Success

Test Preparation Skills **Name**_____

How do you prepare for a test? Have you ever just 'shown up' for a test and then were disappointed by the results?

Successful test preparation requires a strategy and a plan. If you make a plan and carry it out, not only will you be better prepared, but also you will feel more confident and less anxious about the test.

Strategies for careful test preparation

- **Start your test preparation early**, at least several days before the test. Successful test prep involves several steps and you need sufficient time to complete each one.
- Check that you have **completed every homework assignment** that the test will cover. Not completing every assignment causes holes in your body of knowledge.
- Check that **every problem is understood and done with integrity**. Integrity means that you did not copy from the student solution manual or another student and that you re-did any problems for which you got help to guarantee that you can do them yourself!
- **Review your class notes**. Pay particular attention to areas you had marked for further study.
- **Review the Chapter Summary** in your textbook to make sure you understand all the key concepts. Go back to any section where you need more practice and work some of the exercises.
- Go to each section and **reread the section objectives**. For each objective, **choose a representative problem** that best typifies this objective. Write this problem on a 3x5 card, being sure to list the section and problem number where you found it. Write the answer on the back of the card. Put the 3x5 cards together to create your own practice test.
- Work the **practice test** you created. Check your answers with those on the backs of the cards. Go back and review the objectives of any you got wrong.
- **Work out the Chapter Review and/or the Chapter Test**. Do this in a 'test' setting, if possible.
- **Use all available resources** to get help on topics you did not understand.

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