

# Preface

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This sixth edition of \_\_\_\_\_ maintains our objective of providing a textbook designed for use *by the student*. The book is written in a supportive style and includes abundant pedagogic tools to encourage the student to read the text with care, follow the numerous examples, and tackle the exercises. The skills and confidence the student acquires will enable him or her to succeed in more advanced mathematics courses (calculus in particular) that are required in the study of engineering, the natural sciences, business, and management.

## *New to This Edition*

This edition continues emphasis on incorporating graphing calculators as powerful problem-solving and visualization tools, without sacrificing the emphasis of the authors on traditional approaches. New and updated exercises, as well as attention-grabbing chapter openings and projects, have been added to help instructors and students make connections between algebra and the real world. This edition has gone through extensive copy editing and proofing phases in an effort to further ensure the accuracy of this textbook.

## **Increased Use of Technology**

Because many students now have access to graphing calculators, the new graphing calculator material gives instructors a flexible approach for incorporating this technology into their course design. This material, written by Paul Bedard of St. Clair Community College, provides basic and advanced instructions, as well as numerous exercises. Each *Graphing Calculator Alert* section instructs students how to use their graphing calculator effectively. Each *Power User's Corner* section illustrates the special features of the graphing calculator in more advanced calculations. More than 350 exercises, marked with a special icon, give students a chance to practice using their calculators to explore essential algebra concepts graphically.

## Pedagogic Tools

- Concepts are introduced gradually and supported by fully worked examples, figures, and realistic applications to help students build problem-solving skills.
- Many algebraic procedures are described with the aid of a “split screen” that displays, side by side, both the steps of an algorithm and a worked-out example.
- Numerous applied problems from a variety of fields are written by Marilyn Belkin of Villanova University, Nina Edelman of Spring Garden College, and John Santomas of Villanova University.
- A **Progress Check** following many worked-out examples provides an exercise with its answer, enabling the student to test his or her understanding of the material just explained.
-  **Warnings** reinforce good mathematical habits by pointing out incorrect practices most commonly found in homework and exams.
- Numerous vignettes have been included throughout the book. These are independent of the text, yet are often related to the mathematical concepts discussed near where the vignettes appear. They are intended to provide some additional interesting material for the student and instructor.
- To help students check their understanding of the concepts, each chapter concludes with a list of terms and symbols and a list of key ideas for review.
- In addition, the **Chapter Review Exercises** and **Review Tests** give students a chance to practice what they have learned. The **Cumulative Review Exercises** at the end of every third chapter provide additional review practice.

## Exercises



Abundant, carefully graded exercises provide practice in the mechanical and conceptual aspects of algebra. Exercises requiring the use of a calculator or graphing calculator are indicated by the calculator icons shown to the left. Although some exercises require student skills in graphing as well as graphing calculators, the latter may be disregarded, if desired. Answers to selected odd-numbered exercises, review exercises, review tests, and cumulative exercises appear in an appendix at the back of the book. Worked-out solutions to selected review exercises appear in a separate appendix at the back of the book. The solved *Review Exercises* reassure students that they have mastered the concepts in preparation for the *Review Tests*.

## Supplementary Material

Students using *Precalculus*, sixth edition, may purchase the *Student Solutions Manual and Study Guide* by Cheryl Roberts of Northern Virginia Community College. It includes complete solutions to the odd-numbered exercises, to the graphing calculator exercises, and to every exercise in the *Chapter Reviews*, *Progress Checks*, and *Cumulative Review Exercises*. In addition, each chapter of this manual begins with ten additional *Practice Exercises* and ends with a *Chapter Test* containing 20–25 exercises. Solutions to the *Practice Exercises* and answers to the *Chapter Tests* are also included.

Instructors who adopt this text may receive, free of charge, the following items:

- The *Instructor's Resource Manual with Test Bank* contains a course syllabus for both texts, with chapter-by-chapter lecture notes referenced with other supplements and chapter-by-chapter test questions. This manual also contains approximately 2500 test questions, including graphing calculator test questions, referenced by chapter and section text.
- The *Instructor's Solutions Manual*, by Cheryl Roberts of Northern Virginia Community College, contains complete solutions to every exercise in the text.

—Michael Levitan  
Villanova University

—Bernard Kolman  
emeritus, Drexel University

—Arnold Shapiro  
emeritus, Temple University

*New to  
This Edition!*

# BVTLab

## For Students

**BVTLab** the most affordable, comprehensive online lab for college math students, provides the practice questions, learning aids, and communication tools that students need for success.

### Practice Questions

Students can work through an expansive set of practice questions online. Questions are all multiple choice or true/false and are graded instantly for immediate feedback.

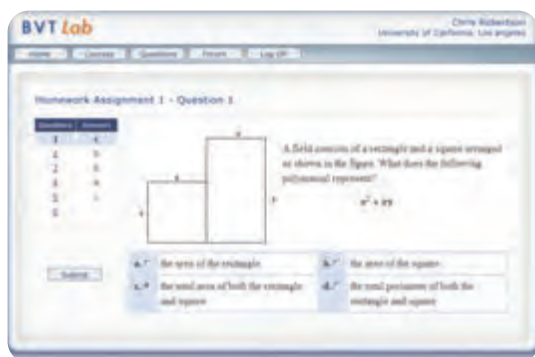


[www.BVTLab.com](http://www.BVTLab.com)



### Worked Solutions

**BVTLab** includes fully worked solutions for many of the odd-numbered questions from the textbook. An extended set of worked solutions is available with the purchase of the Student Solutions package, available at [www.BVTLab.com](http://www.BVTLab.com).



### Tutorials

Online video clips, audio files, or animated tutorials—all playable in any web browser—reinforce challenging concepts.

### Additional Help

Helpful hints accompany selected questions, and the instructors may provide additional tips specific to their students. An “Ask the Instructor” button is also available on homework assignments and practice questions.

### Discussion Forum

An online discussion forum allows students to interact with each other and the instructor to explore challenging concepts and share other resources, while providing an online community for distance learning.

### Review

Students can view their grades for all completed work and also review prior homework and quizzes to identify areas that require additional study.

## New to This Edition!

### For Instructors

**BVTLab**—a simple, robust, online lab for college math instructors and their students—provides essential teaching, assessment, and communication tools. It is an affordable option for students, with student lab fees costing only \$19.99 for a full-semester course.

#### Course Set-up

**BVTLab** has an easy-to-use, intuitive interface that allows instructors to quickly set up their courses and grade books, and replicate them from section to section and semester to semester. Multiple choice and true/false questions can be delivered online as practice questions, homework assignments, quizzes, and tests, each of which draws from a separate bank of questions.



Homework, quizzes, and tests have assigned start and end times; and tests can be proctored in the computer lab, or self-proctored for distance learners. Homework and quizzes offer optional hints and instructor tips. In addition, practice questions can be linked to fully worked solutions and multimedia tutorials.

Instructors can preview and manually select questions assigned to students, or they can use the “quick-pick” feature in **BVTLab** to generate sets of questions.

#### Grade Book

Using an assigned passcode, students register themselves into the grade book. All homework, quizzes, and tests are automatically graded and recorded in the grade book. In addition, instructors can manually enter or modify scores, with provisions for extra credit, attendance, and participation grades.

Grade books can be replicated from section to section, semester to semester, and can be easily edited or modified if required.

#### Communications Tools

Instructors can post discussion threads to a class forum and then monitor and moderate student replies. Important notifications can also be sent directly to each student via email.

