

## Calculus Multivariable, Textbook and Student Solutions Manual, 9th Edition

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## DESCRIPTION

The ninth edition continues to provide engineers with an accessible resource for learning calculus. The book includes carefully worked examples and special problem types that help improve comprehension. New applied exercises demonstrate the usefulness of the mathematics. Additional summary tables with step-by-step details are also incorporated into the chapters to make the concepts easier to understand. The *Quick Check* and *Focus on Concepts* exercises have been updated as well. Engineers become engaged in the material because of the easy-to-read style and real-world examples.

## **№** NEW TO EDITION

Exercise Sets: New true/false exercises and new expository writing exercises have been added.

**Making Connections:** Contains a select group of exercises that draw on ideas developed in the entire chapter rather than focusing on a single section as with the regular exercise sets.

New Chapter 0: The review material from Chapter 1 is now in Chapter 0.

**Visualization:** Illustrations make extensive use of modern computer graphics to clarify concepts and to develop the student's ability to visualize mathematical objects, particularly those in 3-space. For students working with graphing technology, many exercises develop the ability to generate and analyze mathematical curves and surfaces.

Additional Student-Friendly Reorganization The sections "Graphing Functions Using Calculators and Computer Algebra Systems" and "Mathematical Models" are now text appendices; and the section "Second-Order Linear Homogeneous Differential Equations; The Vibrating String" is now posted on the web site that supports this text.

## **FEATURES**

- Readability Balanced with Rigor: The authors' goal is to present precise mathematics to the fullest extent possible in an introductory treatment.
- Commitment to Student Success: Clear writing, effective pedagogy--including special exercises designed for self-assessment-and visual representations of the mathematics help students from a variety of backgrounds to learn. Recognizing variations in learning styles, the authors take a "rule of four" approach, presenting concepts from the verbal, algebraic, visual, and numerical points of view to foster deeper understanding whenever appropriate.
- **Dependability:** Anton provides thorough topic coverage organized to fit standard curricula and carefully-constructed exercise sets that users of previous editions have come to depend upon.
- **Flexibility:** This edition is designed to serve a broad spectrum of calculus philosophies-from traditional to "reform." Technology can be emphasized or not, and the order of many topics can be adapted to accommodate each instructor's specific needs.
- Quick Check Exercises: Each exercise set begins with approximately five exercises (answers included) that are designed to provide the student with an immediate assessment of whether he or she has mastered key ideas from the section. They require a minimum of computation and can usually be answered by filling in the blanks.
- Focus on Concepts Exercises: Each exercise set contains a clearly-identified group of problems that focus on the main ideas of the section.
- **Technology Exercises:** Most sections include exercises that are designed to be solve using either a graphing calculator or a computer algebra system such as Mathematica, Maple, or Derive. These exercises are marked with an icon for easy identification.
- Expository Excellence: Clear explanations allow students to build confidence and provide flexibility for the instructor to use class time for problem solving, applications and explanation of difficult concepts.
- Mathematical Level: The book is written at a mathematical level that is suitable for students planning on careers in engineering or science.

- Applicability of Calculus: One of the primary goals of this text is to link calculus to the real world and the student?s own experience. This theme is carried through in the examples and exercises.
- **Historical Notes:** The biographies and historical notes have been a hallmark of this text from its first edition and have been maintained in this edition. All of the biographical materials have been distilled from standard sources with the goal of capturing the personalities of the great mathematicians and bringing them to life for the student.

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