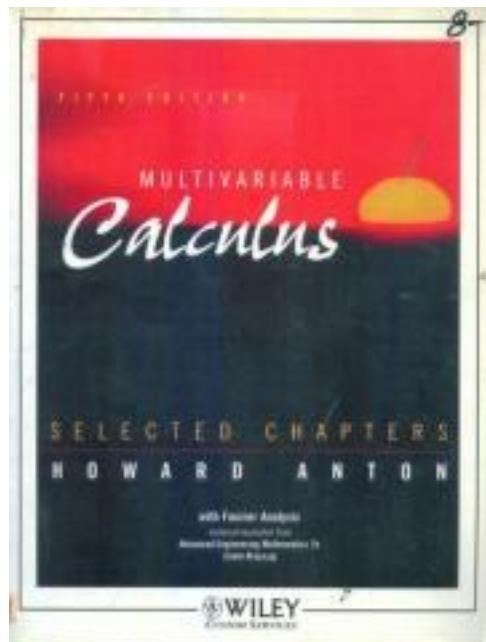


# Multivariable Calculus: Selected Chapters [Fifth Edition, Chapters 16, 17, & 19]



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## ABOUT THIS EDITION

This book consists of the multivariable portion of my text, Calculus with Analytic Geometry, 5th Edition (Chapters 14---18), as well as Chapter 19 on second-order differential equations. Also included are: the chapter on infinite series (Chapter 19), the

section on first-order differential equations (Section 7.7), the appendix on Cramps rule (Appendix D), and the appendix on complex numbers (Appendix E). /

This book, in combination with the Brief Edition of Calculus with Analytic Geometry, 5th Edition, covers all of the material in Calculus with Analytic Geometry, 5th .Edition. It is assumed that the reader has completed a course on single variable calculus, but for reference a brief review of key concepts from single-variable calculus is given at the front of this text.

- ~ Technology -- Each chapter ends with a set of exercises that are designed to be solved using computer algebra systems or graphing calculators. Many of the exercises involve applications, and almost all of them can be solved in a variety of ways that are limited only by the student's imagination.
- ~ Revision of Multivariate Calculus -- The multivariate calculus material was completely rewritten, incorporating the concept of a vector field and focusing more on the major applications of vector analysis to physics and engineering.
- ~ New Material -- Material not included in previous editions was added: Jacobians, parametric representation of surfaces, Kepler's laws, cones in polar coordinates, integrals with respect to arc length, vector fields, and an appendix with some basic material on complex variables that can serve as a reference for engineers and students who need this material for other courses.

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- ~ More Use of Calculator Computations in the Exposition -- We assume in this edition that the student has a numerical calculator available as he or she reads the text, and numerical computations are used more extensively in developing concepts.

## OTHER FEATURES

- ~ Rule of Four -- The term "rule of four" has recently been coined to describe exposition that presents ideas from the symbolic, geometric, computational, and verbal viewpoints. Readers familiar with earlier editions of this text will recognize

that this has always been an integral part of my writing style. This style continues in this edition.

Rigor -- The challenge of writing a good calculus book is to strike the right balance between rigor and clarity. My goal is to present precise mathematics to the fullest extent possible for the freshman audience, but where clarity and rigor conflict I choose clarity. However, I believe it to be essential that the student understand the difference between a careful proof and an informal argument, so I try to make it clear to the reader when arguments are informal.

Historical Notes -- The biographies and historical notes have been a hallmark of this text from its first edition, and new biographies have been added in this edition. All of the biographical material has been distilled from standard sources with the goal of capturing the personalities of the great mathematicians and bringing them to life for the student.

作者介绍:

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