

Advanced Calculus Of Several Variables

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Advanced Calculus - Leonard F. Richardson 2008-04-25

Advanced Calculus reflects the unifying role of linear algebra to smooth readers' transition to advanced mathematics. It fosters the development of complete theorem-proving skills through abundant exercises, for which answers are provided at the back of the book. The traditional theorems of elementary differential and integral calculus are rigorously established, presenting the foundations of calculus in a way that reorients thinking toward modern analysis.

Multivariate Calculus and Geometry - Sean Dineen 2001-03-30

This book provides the higher-level reader with a comprehensive review of all important aspects of Differential Calculus, Integral Calculus and Geometric Calculus of several variables The revised edition, which includes additional exercises and expanded solutions, and gives a solid description of the basic concepts via simple familiar examples which are then tested in technically demanding situations. Readers will gain a deep understanding of the uses and limitations of multivariate calculus.

Advanced Calculus - Patrick Fitzpatrick 2009

"Advanced Calculus is intended as a text for courses that furnish the backbone of the student's undergraduate education in mathematical analysis. The goal is to rigorously present the fundamental concepts within the context of illuminating examples and stimulating exercises. This book is self-contained and starts with the creation of basic tools using the completeness axiom. The continuity, differentiability, integrability, and power series representation properties of functions of a single variable are established. The next few chapters describe the topological and metric properties of Euclidean space. These are the basis of a rigorous treatment of differential calculus (including the Implicit Function Theorem and Lagrange Multipliers) for mappings between Euclidean spaces and integration for functions of several real variables." -pub. desc.

Advanced Calculus - G. B. Folland 2002

This book presents a unified view of calculus in which theory and practice reinforces each other. It is about the theory and applications of derivatives (mostly partial), integrals, (mostly multiple or improper), and infinite series (mostly of functions rather than of numbers), at a deeper level than is found in the standard calculus books. Chapter topics cover: Setting the Stage, Differential Calculus, The Implicit Function Theorem and Its Applications, Integral Calculus, Line and Surface Integrals—Vector Analysis, Infinite Series, Functions Defined by Series and Integrals, and Fourier Series. For individuals with a sound knowledge of the mechanics of one-variable calculus and an acquaintance with linear algebra.

Advanced Calculus of Several Variables - C. H. Edwards 2014-05-10

Advanced Calculus of Several Variables provides a conceptual treatment of multivariable calculus. This book emphasizes the interplay of geometry, analysis through linear algebra, and approximation of nonlinear mappings by linear ones. The classical applications and computational methods that are responsible for much of the interest and importance of calculus are also considered. This text is organized into six chapters. Chapter I deals with linear algebra and geometry of Euclidean n -space R^n . The multivariable differential calculus is treated in Chapters II and III, while multivariable integral calculus is covered in Chapters IV and V. The last chapter is devoted to venerable problems of the calculus of variations. This publication is intended for students who have completed a standard introductory calculus sequence.

Advanced Calculus of Several Variables - C. H. Edwards 2012-10-10

Modern conceptual treatment of multivariable calculus, emphasizing interplay of geometry and analysis via linear algebra and the approximation of nonlinear mappings by linear ones. Over 400 well-chosen problems. 1973 edition.

Advanced Calculus - Avner Friedman 2012-10-16

Intended for students who have already completed a one-year course in

elementary calculus, this two-part treatment advances from functions of one variable to those of several variables. Solutions. 1971 edition.

Multivariable Calculus - L. Corwin 2017-10-19

Classroom-tested and lucidly written, Multivariable Calculus gives a thorough and rigorous treatment of differential and integral calculus of functions of several variables. Designed as a junior-level textbook for an advanced calculus course, this book covers a variety of notions, including continuity, differentiation, multiple integrals, line and surface integrals, differential forms, and infinite series. Numerous exercises and examples throughout the book facilitate the student's understanding of important concepts. The level of rigor in this textbook is high; virtually every result is accompanied by a proof. To accommodate teachers' individual needs, the material is organized so that proofs can be deemphasized or even omitted. Linear algebra for n -dimensional Euclidean space is developed when required for the calculus; for example, linear transformations are discussed for the treatment of derivatives. Featuring a detailed discussion of differential forms and Stokes' theorem, Multivariable Calculus is an excellent textbook for junior-level advanced calculus courses and it is also useful for sophomores who have a strong background in single-variable calculus. A two-year calculus sequence or a one-year honor calculus course is required for the most successful use of this textbook. Students will benefit enormously from this book's systematic approach to mathematical analysis, which will ultimately prepare them for more advanced topics in the field.

Advanced Calculus - R. Creighton Buck 2003

Demonstrating analytical and numerical techniques for attacking problems in the application of mathematics, this well-organized, clearly written text presents the logical relationship and fundamental notations of analysis. Buck discusses analysis not solely as a tool, but as a subject in its own right. This skill-building volume familiarizes students with the language, concepts, and standard theorems of analysis, preparing them to read the mathematical literature on their own. The text revisits certain portions of elementary calculus and gives a systematic, modern approach to the differential and integral calculus of functions and transformations in several variables, including an introduction to the theory of differential forms. The material is structured to benefit those students whose interests lean toward either research in mathematics or its applications.

Introduction to Analysis in Several Variables: Advanced Calculus - Michael E. Taylor 2020-07-27

This text was produced for the second part of a two-part sequence on advanced calculus, whose aim is to provide a firm logical foundation for analysis. The first part treats analysis in one variable, and the text at hand treats analysis in several variables. After a review of topics from one-variable analysis and linear algebra, the text treats in succession multivariable differential calculus, including systems of differential equations, and multivariable integral calculus. It builds on this to develop calculus on surfaces in Euclidean space and also on manifolds. It introduces differential forms and establishes a general Stokes formula. It describes various applications of Stokes formula, from harmonic functions to degree theory. The text then studies the differential geometry of surfaces, including geodesics and curvature, and makes contact with degree theory, via the Gauss-Bonnet theorem. The text also takes up Fourier analysis, and bridges this with results on surfaces, via Fourier analysis on spheres and on compact matrix groups.

Calculus of Several Variables - Serge Lang 2012-12-06

This new, revised edition covers all of the basic topics in calculus of several variables, including vectors, curves, functions of several variables, gradient, tangent plane, maxima and minima, potential functions, curve integrals, Green's theorem, multiple integrals, surface integrals, Stokes' theorem, and the inverse mapping theorem and its consequences. It includes many completely worked-out problems.

Analysis in Vector Spaces - Mustafa A. Akcoglu 2011-09-09

A rigorous introduction to calculus in vector spaces The concepts and theorems of advanced calculus combined with related computational methods are essential to understanding nearly all areas of quantitative science. Analysis in Vector Spaces presents the central results of this classic subject through rigorous arguments, discussions, and examples. The book aims to cultivate not only knowledge of the major theoretical results, but also the geometric intuition needed for both mathematical problem-solving and modeling in the formal sciences. The authors begin with an outline of key concepts, terminology, and notation and also provide a basic introduction to set theory, the properties of real numbers, and a review of linear algebra. An elegant approach to eigenvector problems and the spectral theorem sets the stage for later results on volume and integration. Subsequent chapters present the major results of differential and integral calculus of several variables as well as the theory of manifolds. Additional topical coverage includes: Sets and functions Real numbers Vector functions Normed vector spaces First- and higher-order derivatives Diffeomorphisms and manifolds Multiple integrals Integration on manifolds Stokes' theorem Basic point set topology Numerous examples and exercises are provided in each chapter to reinforce new concepts and to illustrate how results can be applied to additional problems. Furthermore, proofs and examples are presented in a clear style that emphasizes the underlying intuitive ideas. Counterexamples are provided throughout the book to warn against possible mistakes, and extensive appendices outline the construction of real numbers, include a fundamental result about dimension, and present general results about determinants.

Assuming only a fundamental understanding of linear algebra and single variable calculus, Analysis in Vector Spaces is an excellent book for a second course in analysis for mathematics, physics, computer science, and engineering majors at the undergraduate and graduate levels. It also serves as a valuable reference for further study in any discipline that requires a firm understanding of mathematical techniques and concepts.

Multivariable Calculus with Mathematica - Robert P. Gilbert 2020-11-25
Multivariable Calculus with Mathematica is a textbook addressing the calculus of several variables. Instead of just using Mathematica to directly solve problems, the students are encouraged to learn the syntax and to write their own code to solve problems. This not only encourages scientific computing skills but at the same time stresses the complete understanding of the mathematics. Questions are provided at the end of the chapters to test the student's theoretical understanding of the mathematics, and there are also computer algebra questions which test the student's ability to apply their knowledge in non-trivial ways.

Features Ensures that students are not just using the package to directly solve problems, but learning the syntax to write their own code to solve problems Suitable as a main textbook for a Calculus III course, and as a supplementary text for topics scientific computing, engineering, and mathematical physics Written in a style that engages the students' interest and encourages the understanding of the mathematical ideas
Mathematical Analysis - Mariano Giaquinta 2012-12-06

For more than two thousand years some familiarity with mathematics has been regarded as an indispensable part of the intellectual equipment of every cultured person. Today the traditional place of mathematics in education is in grave danger. Unfortunately, professional representatives of mathematics share in the responsibility. The teaching of mathematics has sometimes degenerated into empty drill in problem solving, which may develop formal ability but does not lead to real understanding or to greater intellectual independence. Mathematical research has shown a tendency toward overspecialization and over-emphasis on abstraction. Applications and connections with other fields have been neglected . . . But . . . understanding of mathematics cannot be transmitted by painless entertainment any more than education in music can be brought by the most brilliant journalism to those who never have listened intensively. Actual contact with the content of living mathematics is necessary. Nevertheless technicalities and detours should be avoided, and the presentation of mathematics should be just as free from emphasis on routine as from forbidding dogmatism which refuses to disclose motive or goal and which is an unfair obstacle to honest effort. (From the preface to the first edition of *What is Mathematics?* by Richard Courant and Herbert Robbins, 1941.)

Advanced Differential Calculus - A.K. Sharma 2010

Contents: Change of Independent Variables, Maxima and Minima (Of Functions of a Single Independent Variable), Maxima and Minima (Of Functions of Two Independent Variable), Maxima and Minima (Of Function of Several Independent Variable), Envelopes and Evolutes, Jacobians, Singular Points, Curve Tracing.

Multivariable Calculus with Applications - Peter D. Lax 2018-03-12

This text in multivariable calculus fosters comprehension through meaningful explanations. Written with students in mathematics, the physical sciences, and engineering in mind, it extends concepts from single variable calculus such as derivative, integral, and important theorems to partial derivatives, multiple integrals, Stokes' and divergence theorems. Students with a background in single variable calculus are guided through a variety of problem solving techniques and practice problems. Examples from the physical sciences are utilized to highlight the essential relationship between calculus and modern science. The symbiotic relationship between science and mathematics is shown by deriving and discussing several conservation laws, and vector calculus is utilized to describe a number of physical theories via partial differential equations. Students will learn that mathematics is the language that enables scientific ideas to be precisely formulated and that science is a source for the development of mathematics.

Derivatives and Integrals of Multivariable Functions - Alberto Guzman 2012-12-06

This work provides a systematic examination of derivatives and integrals of multivariable functions. The approach taken here is similar to that of the author's previous text, "Continuous Functions of Vector Variables": specifically, elementary results from single-variable calculus are extended to functions in several-variable Euclidean space. Topics encompass differentiability, partial derivatives, directional derivatives and the gradient; curves, surfaces, and vector fields; the inverse and implicit function theorems; integrability and properties of integrals; and the theorems of Fubini, Stokes, and Gauss. Prerequisites include background in linear algebra, one-variable calculus, and some acquaintance with continuous functions and the topology of the real line. Written in a definition-theorem-proof format, the book is replete with historical comments, questions, and discussions about strategy, difficulties, and alternate paths. "Derivatives and Integrals of Multivariable Functions" is a rigorous introduction to multivariable calculus that will help students build a foundation for further explorations in analysis and differential geometry.

Advanced Calculus - James J. Callahan 2010-09-09

With a fresh geometric approach that incorporates more than 250 illustrations, this textbook sets itself apart from all others in advanced calculus. Besides the classical capstones--the change of variables formula, implicit and inverse function theorems, the integral theorems of Gauss and Stokes--the text treats other important topics in differential analysis, such as Morse's lemma and the Poincaré lemma. The ideas behind most topics can be understood with just two or three variables. The book incorporates modern computational tools to give visualization real power. Using 2D and 3D graphics, the book offers new insights into fundamental elements of the calculus of differentiable maps. The geometric theme continues with an analysis of the physical meaning of the divergence and the curl at a level of detail not found in other advanced calculus books. This is a textbook for undergraduates and graduate students in mathematics, the physical sciences, and economics. Prerequisites are an introduction to linear algebra and multivariable calculus. There is enough material for a year-long course on advanced calculus and for a variety of semester courses--including topics in geometry. The measured pace of the book, with its extensive examples and illustrations, make it especially suitable for independent study.

Advanced Calculus of Several Variables - Charles Henry Edwards 1994-01-01

Modern conceptual treatment of multivariable calculus, emphasizing the interplay of geometry and analysis via linear algebra and the approximation of nonlinear mappings by linear ones. At the same time, ample attention is paid to the classical applications and computational methods. Hundreds of examples, problems and figures. 1973 edition.

Advanced Calculus: Fundamentals of Mathematics - Carlos Polanco 2019-07-31

Vector calculus is an essential mathematical tool for performing mathematical analysis of physical and natural phenomena. It is employed in advanced applications in the field of engineering and computer simulations. This textbook covers the fundamental requirements of vector calculus in curricula for college students in mathematics and engineering programs. Chapters start from the basics of vector algebra, real valued functions, different forms of integrals, geometric algebra and the various theorems relevant to vector calculus and differential forms. Readers will find a concise and clear study of vector calculus, along with several examples, exercises, and a case study in each chapter. The solutions to the exercises are also included at the end of the book. This is

an ideal book for students with a basic background in mathematics who wish to learn about advanced calculus as part of their college curriculum and equip themselves with the knowledge to apply theoretical concepts in practical situations.

Calculus on Manifolds - Michael Spivak 1965

This book uses elementary versions of modern methods found in sophisticated mathematics to discuss portions of "advanced calculus" in which the subtlety of the concepts and methods makes rigor difficult to attain at an elementary level.

Introduction to Analysis in One Variable - Michael E. Taylor
2020-08-11

This is a text for students who have had a three-course calculus sequence and who are ready to explore the logical structure of analysis as the backbone of calculus. It begins with a development of the real numbers, building this system from more basic objects (natural numbers, integers, rational numbers, Cauchy sequences), and it produces basic algebraic and metric properties of the real number line as propositions, rather than axioms. The text also makes use of the complex numbers and incorporates this into the development of differential and integral calculus. For example, it develops the theory of the exponential function for both real and complex arguments, and it makes a geometrical study of the curve $(\exp t, t)$, for real t , leading to a self-contained development of the trigonometric functions and to a derivation of the Euler identity that is very different from what one typically sees. Further topics include metric spaces, the Stone-Weierstrass theorem, and Fourier series.

Advanced differential calculus on several variables - Subir Kumar Mukherjee 2009

Multivariable Mathematics - Theodore Shifrin 2004-01-26

Multivariable Mathematics combines linear algebra and multivariable mathematics in a rigorous approach. The material is integrated to emphasize the recurring theme of implicit versus explicit that persists in linear algebra and analysis. In the text, the author includes all of the standard computational material found in the usual linear algebra and multivariable calculus courses, and more, interweaving the material as effectively as possible, and also includes complete proofs. * Contains plenty of examples, clear proofs, and significant motivation for the crucial concepts. * Numerous exercises of varying levels of difficulty, both computational and more proof-oriented. * Exercises are arranged in order of increasing difficulty.

Advanced Calculus - Pietro-Luciano Buono 2016-09-12

This textbook offers a high-level introduction to multi-variable differential calculus. Differential forms are introduced incrementally in the narrative, eventually leading to a unified treatment of Green's, Stokes' and Gauss' theorems. Furthermore, the presentation offers a natural route to differential geometry. Contents: Calculus of Vector Functions Tangent Spaces and 1-forms Line Integrals Differential Calculus of Mappings Applications of Differential Calculus Double and Triple Integrals Wedge Products and Exterior Derivatives Integration of Forms Stokes' Theorem and Applications

Functions Of Several Real Variables - Martin Moskowitz 2011-04-29

This book begins with the basics of the geometry and topology of Euclidean space and continues with the main topics in the theory of functions of several real variables including limits, continuity, differentiation and integration. All topics and in particular, differentiation and integration, are treated in depth and with mathematical rigor. The classical theorems of differentiation and integration such as the Inverse and Implicit Function theorems, Lagrange's multiplier rule, Fubini's theorem, the change of variables formula, Green's, Stokes' and Gauss' theorems are proved in detail and many of them with novel proofs. The authors develop the theory in a logical sequence building one result upon the other, enriching the development with numerous explanatory remarks and historical footnotes. A number of well chosen illustrative examples and counter-examples clarify matters and teach the reader how to apply these results and solve problems in mathematics, the other sciences and economics. Each of the chapters concludes with groups of exercises and problems, many of them with detailed solutions while others with hints or final answers. More advanced topics, such as Morse's lemma, Sard's theorem, the Weierstrass approximation theorem, the Fourier transform, Vector fields on spheres, Brouwer's fixed point theorem, Whitney's embedding theorem, Picard's theorem, and Hermite polynomials are discussed in starred sections.

Multivariable Calculus, Linear Algebra, and Differential Equations -

Stanley I. Grossman 2014-05-10

Multivariable Calculus, Linear Algebra, and Differential Equations, Second Edition contains a comprehensive coverage of the study of advanced calculus, linear algebra, and differential equations for sophomore college students. The text includes a large number of examples, exercises, cases, and applications for students to learn calculus well. Also included is the history and development of calculus. The book is divided into five parts. The first part includes multivariable calculus material. The second part is an introduction to linear algebra. The third part of the book combines techniques from calculus and linear algebra and contains discussions of some of the most elegant results in calculus including Taylor's theorem in "n" variables, the multivariable mean value theorem, and the implicit function theorem. The fourth section contains detailed discussions of first-order and linear second-order equations. Also included are optional discussions of electric circuits and vibratory motion. The final section discusses Taylor's theorem, sequences, and series. The book is intended for sophomore college students of advanced calculus.

Advanced Calculus - Louis Brand 1955

Advanced Calculus - Hans Sagan 1974

Advanced Calculus and Vector Field Theory - Kathleen M. Urwin
1966

Advanced Calculus - Lynn Harold Loomis 2014-02-26

An authorised reissue of the long out of print classic textbook, *Advanced Calculus* by the late Dr Lynn Loomis and Dr Shlomo Sternberg both of Harvard University has been a revered but hard to find textbook for the advanced calculus course for decades. This book is based on an honors course in advanced calculus that the authors gave in the 1960's. The foundational material, presented in the unstarred sections of Chapters 1 through 11, was normally covered, but different applications of this basic material were stressed from year to year, and the book therefore contains more material than was covered in any one year. It can accordingly be used (with omissions) as a text for a year's course in advanced calculus, or as a text for a three-semester introduction to analysis. The prerequisites are a good grounding in the calculus of one variable from a mathematically rigorous point of view, together with some acquaintance with linear algebra. The reader should be familiar with limit and continuity type arguments and have a certain amount of mathematical sophistication. As possible introductory texts, we mention *Differential and Integral Calculus* by R Courant, *Calculus* by T Apostol, *Calculus* by M Spivak, and *Pure Mathematics* by G Hardy. The reader should also have some experience with partial derivatives. In overall plan the book divides roughly into a first half which develops the calculus (principally the differential calculus) in the setting of normed vector spaces, and a second half which deals with the calculus of differentiable manifolds.

Mathematical Analysis - Mariano Giaquinta 2010-07-25

This superb and self-contained work is an introductory presentation of basic ideas, structures, and results of differential and integral calculus for functions of several variables. The wide range of topics covered include the differential calculus of several variables, including differential calculus of Banach spaces, the relevant results of Lebesgue integration theory, and systems and stability of ordinary differential equations. An appendix highlights important mathematicians and other scientists whose contributions have made a great impact on the development of theories in analysis. This text motivates the study of the analysis of several variables with examples, observations, exercises, and illustrations. It may be used in the classroom setting or for self-study by advanced undergraduate and graduate students and as a valuable reference for researchers in mathematics, physics, and engineering.

Advanced Calculus - H.K Nickerson 2013-02-28

Starting with an abstract treatment of vector spaces and linear transforms, this introduction presents a corresponding theory of integration and concludes with applications to analytic functions of complex variables. 1959 edition.

Advanced Calculus - David V. Widder 2012-08

Precise approach with definitions, theorems, proofs, examples and exercises. Topics include partial differentiation, vectors, differential geometry, Stieltjes integral, infinite series, gamma function, Fourier series, Laplace transform, much more. Numerous graded exercises with selected answers.

Multivariable Calculus and Mathematica® - Kevin R. Coombes

2012-12-06

Aiming to "modernise" the course through the integration of Mathematica, this publication introduces students to its multivariable uses, instructs them on its use as a tool in simplifying calculations, and presents introductions to geometry, mathematical physics, and kinematics. The authors make it clear that Mathematica is not algorithms, but at the same time, they clearly see the ways in which Mathematica can make things cleaner, clearer and simpler. The sets of problems give students an opportunity to practice their newly learned skills, covering simple calculations, simple plots, a review of one-variable calculus using Mathematica for symbolic differentiation, integration and numerical integration, and also cover the practice of incorporating text and headings into a Mathematica notebook. The accompanying diskette contains both Mathematica 2.2 and 3.0 version notebooks, as well as sample examination problems for students, which can be used with any standard multivariable calculus textbook. It is assumed that students will also have access to an introductory primer for Mathematica.

Advanced Calculus - Voxman 2017-10-19

Advanced Calculus: An Introduction to Modern Analysis, an advanced undergraduate textbook, provides mathematics majors, as well as students who need mathematics in their field of study, with an introduction to the theory and applications of elementary analysis. The text presents, in an accessible form, a carefully maintained balance between abstract concepts and applied results of significance that serves to bridge the gap between the two- or three-semester calculus sequence and senior/graduate level courses in the theory and applications of ordinary and partial differential equations, complex variables, numerical methods, and measure and integration theory. The book focuses on topological concepts, such as compactness, connectedness, and metric spaces, and topics from analysis including Fourier series, numerical analysis, complex integration, generalized functions, and Fourier and Laplace transforms. Applications from genetics, spring systems, enzyme transfer, and a thorough introduction to the classical vibrating string, heat transfer, and brachistochrone problems illustrate this book's usefulness to the non-mathematics major. Extensive problem sets found throughout the book test the student's understanding of the topics and help develop the student's ability to handle more abstract mathematical ideas. Advanced Calculus: An Introduction to Modern Analysis is intended for junior- and senior-level undergraduate students in mathematics, biology, engineering, physics, and other related disciplines. An excellent textbook for a one-year course in advanced calculus, the methods employed in this text will increase students' mathematical maturity and prepare them solidly for senior/graduate level topics. The wealth of materials in the text allows the instructor to select topics that are of special interest to the student. A two- or three-semester calculus sequence is required for successful use of this book.

Functions of Several Variables - Wendell Fleming 2012-12-06

This new edition, like the first, presents a thorough introduction to differential and integral calculus, including the integration of differential

forms on manifolds. However, an additional chapter on elementary topology makes the book more complete as an advanced calculus text, and sections have been added introducing physical applications in thermodynamics, fluid dynamics, and classical rigid body mechanics.

Calculus Using Mathematica - K.D. Stroyan 2014-05-10

Calculus Using Mathematica: Scientific Projects and Mathematical Background is a companion to the core text, Calculus Using Mathematica. The book contains projects that illustrate applications of calculus to a variety of practical situations. The text consists of 14 chapters of various projects on how to apply the concepts and methodologies of calculus. Chapters are devoted to epidemiological applications; log and exponential functions in science; applications to mechanics, optics, economics, and ecology. Applications of linear differential equations; forced linear equations; differential equations from vector geometry; and to chemical reactions are presented as well. College students of calculus will find this book very helpful.

Schaums Outline of Advanced Calculus, Second Edition - Robert C. Wrede 2002-02-20

Confusing Textbooks? Missed Lectures? Not Enough Time? Fortunately for you, there's Schaums Outlines. More than 40 million students have trusted Schaums to help them succeed in the classroom and on exams. Schaums is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaums Outline gives you Practice problems with full explanations that reinforce knowledge. Coverage of the most up-to-date developments in your course field. In-depth review of practices and applications. Fully compatible with your classroom text, Schaums highlights all the important facts you need to know. Use Schaums to shorten your study time-and get your best test scores! Schaums Outlines-Problem Solved.

Advanced Calculus - John Srdjan Petrovic 2013-11-01

Suitable for a one- or two-semester course, Advanced Calculus: Theory and Practice expands on the material covered in elementary calculus and presents this material in a rigorous manner. The text improves students' problem-solving and proof-writing skills, familiarizes them with the historical development of calculus concepts, and helps them understand the connections among different topics. The book takes a motivating approach that makes ideas less abstract to students. It explains how various topics in calculus may seem unrelated but in reality have common roots. Emphasizing historical perspectives, the text gives students a glimpse into the development of calculus and its ideas from the age of Newton and Leibniz to the twentieth century. Nearly 300 examples lead to important theorems as well as help students develop the necessary skills to closely examine the theorems. Proofs are also presented in an accessible way to students. By strengthening skills gained through elementary calculus, this textbook leads students toward mastering calculus techniques. It will help them succeed in their future mathematical or engineering studies.