

Free Introductory Calculus For Infants

For many students, calculus can be the most mystifying and frustrating course they will ever take. Based upon Adrian Banner's popular calculus review course at Princeton University, this book provides students with the essential tools they need not only to learn calculus, but also to excel at it.

A new approach to teaching calculus that uses historical examples and draws on applications from science and engineering. Breaking the mold of existing calculus textbooks, *Calculus in Context* draws students into the subject in two new ways.

Part I develops the mathematical preliminaries (including geometry, trigonometry, algebra, and coordinate geometry) within the historical frame of the ancient Greeks and the heliocentric revolution in astronomy. Part II starts with comprehensive and modern treatments of the fundamentals of both differential and integral calculus, then turns to a wide-ranging discussion of applications. Students will learn that core ideas of calculus are central to concepts such as acceleration, force, momentum, torque, inertia, and the properties of lenses. Classroom-tested at Notre Dame University, this textbook is suitable for students of wide-ranging backgrounds because it engages its subject at several

levels and offers ample and flexible problem set options for instructors. Parts I and II are both supplemented by expansive Problems and Projects segments. Topics covered in the book include:

- the basics of geometry, trigonometry, algebra, and coordinate geometry and the historical, scientific agenda that drove their development
- a brief, introductory calculus from the works of Newton and Leibniz
- a modern development of the essentials of differential and integral calculus
- the analysis of specific, relatable applications, such as the arc of the George Washington Bridge; the dome of the Pantheon; the optics of a telescope; the dynamics of a bullet; the geometry of the

pseudosphere; the motion of a planet in orbit; and the momentum of an object in free fall. Calculus in Context is a compelling exploration—for students and instructors alike—of a discipline that is both rich in conceptual beauty and broad in its applied relevance.

Calculus for Engineering Students: Fundamentals, Real Problems, and Computers insists that mathematics cannot be separated from chemistry, mechanics, electricity, electronics, automation, and other disciplines. It emphasizes interdisciplinary problems as a way to show the importance of calculus in engineering tasks and problems. While concentrating on actual problems instead of theory, the

book uses Computer Algebra Systems (CAS) to help students incorporate lessons into their own studies. Assuming a working familiarity with calculus concepts, the book provides a hands-on opportunity for students to increase their calculus and mathematics skills while also learning about engineering applications. Organized around project-based rather than traditional homework-based learning Reviews basic mathematics and theory while also introducing applications Employs uniform chapter sections that encourage the comparison and contrast of different areas of engineering

The calculus of variations is one of the oldest subjects in mathematics,

yet is very much alive and is still evolving. Besides its mathematical importance and its links to other branches of mathematics, such as geometry or differential equations, it is widely used in physics, engineering, economics and biology. This book serves both as a guide to the expansive existing literature and as an aid to the non-specialist ? mathematicians, physicists, engineers, students or researchers ? in discovering the subject's most important problems, results and techniques. Despite the aim of addressing non-specialists, mathematical rigor has not been sacrificed; most of the theorems are either fully proved or proved under more stringent conditions. In this new edition, the chapter on regularity has been significantly

expanded and 27 new exercises have been added. The book, containing a total of 103 exercises with detailed solutions, is well designed for a course at both undergraduate and graduate levels. Fundamentals, Real Problems, and Computers

Advanced Calculus

A First Course in Calculus

Introduction to Stochastic Calculus with Applications

Learning Basic Calculus

Gilbert Strang's clear, direct style and detailed, intensive explanations make this textbook ideal as both a course companion and for self-study. Single variable and multivariable calculus are covered in depth. Key examples of the application

of calculus to areas such as physics, engineering and economics are included in order to enhance students' understanding. New to the third edition is a chapter on the 'Highlights of calculus', which accompanies the popular video lectures by the author on MIT's OpenCourseWare. These can be accessed from math.mit.edu/~gs.

Designed for undergraduate mathematics majors, this rigorous and rewarding treatment covers the usual topics of first-year calculus: limits, derivatives, integrals, and infinite series. Author Daniel J. Velleman focuses

on calculus as a tool for problem solving rather than the subject's theoretical foundations. Stressing a fundamental understanding of the concepts of calculus instead of memorized procedures, this volume teaches problem solving by reasoning, not just calculation. The goal of the text is an understanding of calculus that is deep enough to allow the student to not only find answers to problems, but also achieve certainty of the answers' correctness. No background in calculus is necessary. Prerequisites include proficiency in basic algebra and trigonometry, and a

concise review of both areas provides sufficient background. Extensive problem material appears throughout the text and includes selected answers. Complete solutions are available to instructors. The storybook adventure of two friends as they discover the wonders of calculus. With a "less is more" approach to introducing the reader to the fundamental concepts and uses of Calculus, this sequence of four books covers the usual topics of the first semester of calculus, including limits, continuity, the derivative, the integral and important special functions

such exponential functions,
logarithms, and inverse
trigonometric functions.

Calculus Made Easy

Pre-Calculus For Dummies

Calculus for Engineering
Students

Infinitesimals to the Rescue

Short Calculus

MATH 221 FIRST Semester

Calculus By Sigurd Angenent

This book presents a concise
treatment of stochastic calculus and its
applications. It gives a simple but
rigorous treatment of the subject
including a range of advanced topics,
it is useful for practitioners who use
advanced theoretical results. It covers
advanced applications, such as
models in mathematical finance,

biology and engineering. Self-contained and unified in presentation, the book contains many solved examples and exercises. It may be used as a textbook by advanced undergraduates and graduate students in stochastic calculus and financial mathematics. It is also suitable for practitioners who wish to gain an understanding or working knowledge of the subject. For mathematicians, this book could be a first text on stochastic calculus; it is good companion to more advanced texts by a way of examples and exercises. For people from other fields, it provides a way to gain a working knowledge of stochastic calculus. It shows all readers the applications of

stochastic calculus methods and takes readers to the technical level required in research and sophisticated modelling. This second edition contains a new chapter on bonds, interest rates and their options. New materials include more worked out examples in all chapters, best estimators, more results on change of time, change of measure, random measures, new results on exotic options, FX options, stochastic and implied volatility, models of the age-dependent branching process and the stochastic Lotka-Volterra model in biology, non-linear filtering in engineering and five new figures. Instructors can obtain slides of the text from the author.

College Calculus: A One-Term Course for Students with Previous Calculus Experience is a textbook for students who have successfully experienced an introductory calculus course in high school. College Calculus begins with a brief review of some of the content of the high school calculus course, and proceeds to give students a thorough grounding in the remaining topics in single variable calculus, including integration techniques, applications of the definite integral, separable and linear differential equations, hyperbolic functions, parametric equations and polar coordinates, L'Hôpital's rule and improper integrals, continuous probability models, and

infinite series. Each chapter concludes with several “ Explorations, ” extended discovery investigations to supplement that chapter ’ s material. The text is ideal as the basis of a course focused on the needs of prospective majors in the STEM disciplines (science, technology, engineering, and mathematics). A one-term course based on this text provides students with a solid foundation in single variable calculus and prepares them for the next course in college level mathematics, be it multivariable calculus, linear algebra, a course in discrete mathematics, statistics, etc.

CONTENTS: This textbook covers the mechanics portion of first-

semester calculus-based physics.

AUDIENCE: This calculus-based physics textbook is geared toward independent learners who can handle the rigors of calculus and who seek to develop a strong introduction to the fundamentals of physics, both mathematically and conceptually. It could also serve as a useful reference for physics and engineering students who have gone beyond the first year of physics, but who would like to review the fundamentals as they explore more advanced fields of physics. This volume is dedicated to mechanics.

PREREQUISITES: No previous exposure to physics is assumed. The student should be familiar with the basic techniques of

differentiation and integration, including polynomials and trig functions, and should be fluent in algebra and familiar with the basic trig functions. **COREQUISITES:** The textbook teaches Calculus II skills as needed, such as the technique of integrating via trigonometric substitution. The textbook also reviews some Calculus I skills which students often forget, such as the mean-value theorem, l' Hopital's rule, and the chain rule. This is not done in an introductory chapter or an appendix, but in the main text as these ideas first become useful.

IMPORTANT DISTINCTIONS:
Boxes of important distinctions are included in order to help students

distinguish between similar concepts
– like average speed and average velocity, between velocity and acceleration, or between mass and weight. **TABLE OF EQUATIONS:** There is a handy table of equations organized by topic on the back cover of the textbook. The equations in the text (but not on the cover) also include notes to help students understand any limitations that the equations may have (e.g. some equations only apply if acceleration is uniform or if mass is constant). **CONCISE OUTLINE FORMAT:** The text is conveniently organized by specific topic to help students who may not be reading straight through, but who may be searching for a

specific idea or who may be reviewing material that they read previously. There is also a handy index to help locate concepts quickly. Examples and problem-solving strategies clearly stand out from discussions of concepts. **MATHEMATICAL & CONCEPTUAL EMPHASIS:** There is much emphasis both on learning the mathematics precisely and understanding the concepts at a deep, precise level. An underlying idea is that students should not guess at concepts, but that concepts are mathematically motivated: Let the equations be your guide. **PROBLEM-SOLVING STRATEGIES:** All of the main problem-solving strategies — like projectile motion, applying

Newton's second law, or conserving energy – are highlighted and described step-by-step and in detail. Examples illustrate how to carry out all of the problem-solving strategies.

NOTES: Several notes are boxed to describe important points, common mistakes, and exceptions. Hundreds of footnotes are included to discuss subtleties without interrupting the flow of the text. **EXAMPLES:**

Conceptual and problem-solving examples were selected based on their instructiveness in elucidating important concepts or illustrating how to carry out important problem-solving strategies; quality was favored over quantity. Simple plug-and-chug examples and problems are scarce,

since the audience for this book is independent students. **PRACTICE:** The end of each chapter has a good selection of instructive conceptual questions and practice problems. **HINTS & ANSWERS:** 100% of the conceptual questions have both hints and answers, since it's crucial to develop a solid understanding of the concepts in order to succeed in physics. Some of the practice problems have answers to help independent students gain confidence by reproducing the same answers, while 100% of the practice problems have hints so that students can see if they are solving the problems correctly (even if the problem doesn't have the answer in the back).

Differential and Integral Calculus
An Introduction to Modern Analysis
Introductory Calculus for Infants
College Calculus
An Introduction to Functional
Programming Through Lambda
Calculus
Understanding Basic Calculus By
S.K. Chung
Calculus: A Complete Introduction
is the most comprehensive yet easy-
to-use introduction to using calculus.
Written by a leading expert, this
book will help you if you are
studying for an important exam or
essay, or if you simply want to
improve your knowledge. The book
covers all areas of calculus, including
functions, gradients, rates of change,

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differentiation, exponential and logarithmic functions and integration. Everything you will need to know is here in one book. Each chapter includes not only an explanation of the knowledge and skills you need, but also worked examples and test questions.

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.

The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are

traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those

learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

All the Tools You Need to Excel at
Calculus

MATH 221 FIRST Semester

Calculus

Calculus

A One-Term Course for Students
with Previous Calculus Experience

Mathematics for Machine Learning

Calculus Set Free: Infinitesimals

to the Rescue is a single-variable

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calculus textbook that incorporates the use of infinitesimal methods. The procedures used throughout make many of the calculations simpler and the concepts clearer for undergraduate students, heightening success and easing a significant burden of entry into STEM disciplines. This text features a student-friendly exposition with ample marginal notes, examples, illustrations, and more. The exercises include a wide range of difficulty levels, stretching from very simple rapid response questions to the occasional exercise meant to test knowledge. While some

exercises require the use of technology to work through, none are dependent on any specific software. The answers to odd-numbered exercises in the back of the book include both simplified and non-simplified answers, hints, or alternative answers. Throughout the text, notes in the margins include comments meant to supplement understanding, sometimes including line-by-line commentary for worked examples. Without sacrificing academic rigor, Calculus Set Free offers an engaging style that helps students to solidify their understanding on difficult

theoretical calculus.

Clear, rigorous introductory treatment covers applications to geometry, dynamics, and physics. It focuses upon problems with one independent variable, connecting abstract theory with its use in concrete problems. 1962 edition.

This fifth edition of Lang's book covers all the topics traditionally taught in the first-year calculus sequence. Divided into five parts, each section of A FIRST COURSE IN CALCULUS contains examples and applications relating to the topic covered. In addition, the rear of the book contains detailed

solutions to a large number of the exercises, allowing them to be used as worked-out examples -- one of the main improvements over previous editions.

Calculus Made Easy by Silvanus P. Thompson and Martin

Gardner has long been the most popular calculus primer, and this major revision of the classic math text makes the subject at hand still more comprehensible to readers of all levels. With a new introduction, three new chapters, modernized language and methods throughout, and an appendix of challenging and enjoyable practice problems, *Calculus Made Easy* has been

thoroughly updated for the modern reader.

The Calculus Lifesaver

The Calculus of Variations and Optimal Control

Toward a Lean and Lively Calculus

An Introduction to Derivative Pricing

Calculus in Context

The approach here relies on two beliefs. The first is that almost nobody fully understands calculus the first time around.

The second is that graphing calculators can be used to simplify the theory of limits for students. This book presents the theoretical pieces of introductory

calculus, using appropriate technology, in a style suitable to accompany almost any first calculus text. It offers a large range of increasingly sophisticated examples and problems to build an understanding of the notion of limit and other theoretical concepts. Aimed at students who will study fields in which the understanding of calculus as a tool is not sufficient, the text uses the "spiral approach" of teaching, returning again and again to difficult topics, anticipating such returns across the calculus courses in preparation for the first analysis course. Suitable as

the "content" text for a transition to upper level mathematics course.

The book begins at the level of an undergraduate student assuming only basic knowledge of calculus in one variable. It rigorously treats topics such as multivariable differential calculus, Lebesgue integral, vector calculus and differential equations. After having built on a solid foundation of topology and linear algebra, the text later expands into more advanced topics such as complex analysis, differential forms, calculus of variations, differential geometry and even functional analysis.

Overall, this text provides a unique and well-rounded introduction to the highly developed and multi-faceted subject of mathematical analysis, as understood by a mathematician today.?

"Calculus Volume 3 is the third of three volumes designed for the two- or three-semester calculus course. For many students, this course provides the foundation to a career in mathematics, science, or engineering."-- OpenStax, Rice University Presents a treatment of stochastic calculus. This title gives its main applications in finance, biology and engineering.

It presents the theory of stochastic calculus and its applications to an audience which possesses only a basic knowledge of calculus and probability.

Calculus: A Complete Introduction

An Introduction to the Calculus of Variations

Revised

Introductory Calculus I:
Understanding the Integral

Precalculus

Get ahead in pre-calculus Pre-calculus courses have become increasingly popular with 35 percent of students in the U.S. taking the course in middle or

high school. Often, completion of such a course is a prerequisite for calculus and other upper level mathematics courses. Pre-Calculus For Dummies is an invaluable resource for students enrolled in pre-calculus courses. By presenting the essential topics in a clear and concise manner, the book helps students improve their understanding of pre-calculus and become prepared for upper level math courses. Provides fundamental information in an approachable manner Includes fresh example problems Practical explanations mirror today's teaching methods Offers relevant cultural

references Whether used as a classroom aid or as a refresher in preparation for an introductory calculus course, this book is one you'll want to have on hand to perform your very best.

Calculus is the mathematics of change, and change is an integral part of the universe.

Mathematicians and scientists of all persuasions know that calculus is a cornerstone of modern science. Calculus allows us to solve a variety of problems dealing with continuously varying quantities. This development, which dates back to the seventeenth century, with the work of many great

mathematicians, but in particular Isaac Newton and Gottfried Leibniz, has added tremendously to the power of our science and has allowed us to understand and master our world in ways that are nothing less than revolutionary. We should consider it to be one of the few truly great achievements of the human mind. This book explains all the basic concepts of single variable calculus through the theory and application of the derivative, the theory and application of the definite integral, and the connection between these two main parts of the subject by way of the

fundamental theorem of calculus. After the discussion of differentiation and integration, I have included some of the basics of differential equations and their applications so that the student can see how important the differential and integral calculus is to many different areas. The book contains an abundance of examples at every step and many exercises to help the student learn the subject. It has been titled "Introductory Calculus" because it is mainly about the single variable part of the subject, the portion devoted to real valued functions of a single variable, which is the

starting point for most of the larger treatment of calculus. So we have a compact and rigorous introduction to calculus so that the student can quickly grasp the essential concepts and get a feel for the many applications of the subject.

The rewards and dangers of speculating in the modern financial markets have come to the fore in recent times with the collapse of banks and bankruptcies of public corporations as a direct result of ill-judged investment. At the same time, individuals are paid huge sums to use their mathematical skills to make well-

judged investment decisions. Here now is the first rigorous and accessible account of the mathematics behind the pricing, construction and hedging of derivative securities. Key concepts such as martingales, change of measure, and the Heath-Jarrow-Morton model are described with mathematical precision in a style tailored for market practitioners. Starting from discrete-time hedging on binary trees, continuous-time stock models (including Black-Scholes) are developed. Practicalities are stressed, including examples from stock, currency and interest rate

markets, all accompanied by graphical illustrations with realistic data. A full glossary of probabilistic and financial terms is provided. This unique book will be an essential purchase for market practitioners, quantitative analysts, and derivatives traders. Well-respected text for computer science students provides an accessible introduction to functional programming. Cogent examples illuminate the central ideas, and numerous exercises offer reinforcement. Includes solutions. 1989 edition.

Introductory Calculus

Understanding Basic Calculus

APEX Calculus

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An Advanced Introduction to Calculus-Based Physics (Mechanics)

The Original Edition of “A First
Course in Calculus”

An accessible introduction to the
fundamentals of calculus needed
to solve current problems in
engineering and the
physical sciences. Integration is
an important function of calculus,
and Introduction to Integral
Calculus combines fundamental
concepts with scientific problems
to develop intuition and skills
for solving mathematical
problems related to engineering
and the physical sciences. The
authors provide a solid

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introduction to integral calculus and feature applications of integration, solutions of differential equations, and evaluation methods. With logical organization coupled with clear, simple explanations, the authors reinforce new concepts to progressively build skills and knowledge, and numerous real-world examples as well as intriguing applications help readers to better understand the connections between the theory of calculus and practical problem solving. The first six chapters address the prerequisites needed to understand the principles of integral calculus and

explore such topics as anti-derivatives, methods of converting integrals into standard form, and the concept of area. Next, the authors review numerous methods and applications of integral calculus, including: Mastering and applying the first and second fundamental theorems of calculus to compute definite integrals Defining the natural logarithmic function using calculus Evaluating definite integrals Calculating plane areas bounded by curves Applying basic concepts of differential equations to solve ordinary differential equations With this book as their

guide, readers quickly learn to solve a broad range of current problems throughout the physical sciences and engineering that can only be solved with calculus. Examples throughout provide practical guidance, and practice problems and exercises allow for further development and fine-tuning of various calculus skills. Introduction to Integral Calculus is an excellent book for upper-undergraduate calculus courses and is also an ideal reference for students and professionals who would like to gain a further understanding of the use of calculus to solve problems in a simplified manner.

This introductory calculus text was developed by the author through his teaching of an honors calculus course at Notre Dame. The book develops calculus, as well as the necessary trigonometry and analytic geometry, from within the relevant historical context, and yet it is not a textbook in the history of mathematics as such. The notation is modern, and the material is selected to cover the basics of the subject. Special emphasis is placed on pedagogy throughout. While emphasizing the broad applications of the subject, emphasis is placed on the mathematical content of the

subject.

A rigorous introduction to the mathematics of pricing, construction and hedging of derivative securities.

The classic introduction to the fundamentals of calculus Richard Courant's classic text Differential and Integral Calculus is an essential text for those preparing for a career in physics or applied math. Volume 1 introduces the foundational concepts of "function" and "limit", and offers detailed explanations that illustrate the "why" as well as the "how". Comprehensive coverage of the basics of integrals and differentials includes their

applications as well as clearly-defined techniques and essential theorems. Multiple appendices provide supplementary explanation and author notes, as well as solutions and hints for all in-text problems.

Background, Basics, and
Applications

Inside Calculus

Financial Calculus

Introduction to Calculus and
Analysis II/1

Introduction to Integral Calculus

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

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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.

This book is intended to present an introductory treatment of the calculus of variations in Part I and of optimal control theory in Part II. The discussion in Part I is restricted to the simplest problem of the calculus of variations. The topic is entirely classical; all of the basic theory had been developed before the turn of the

century. Consequently the material comes from many sources.

APEX Calculus is a calculus textbook written for traditional college/university calculus courses. It has the look and feel of the calculus book you likely use right now (Stewart, Thomas & Finney, etc.). The explanations of new concepts is clear, written for someone who does not yet know calculus. Each section ends with an exercise set with ample problems to practice & test skills (odd answers are in the back).

From the reviews: "...one of the best textbooks introducing

several generations of mathematicians to higher mathematics. ... This excellent book is highly recommended both to instructors and students."

--Acta Scientiarum

Mathematicarum, 1991

Systematic Studies with
Engineering Applications for
Beginners

Calculus Set Free

Introduction to Mathematical
Analysis

Introduction to the Calculus of
Variations

Calculus: A Rigorous First
Course

From the reviews "This is a
reprint of the original edition of

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Lang's 'A First Course in Calculus', which was first published in 1964....The treatment is 'as rigorous as any mathematician would wish it'....[The exercises] are refreshingly simply stated, without any extraneous verbiage, and at times quite challenging....There are answers to all the exercises set and some supplementary problems on each topic to tax even the most able." --Mathematical Gazette
This book introduces the reader to the basics of calculus, using worked examples, exercises and self-tests.

Precalculus is adaptable and

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designed to fit the needs of a variety of precalculus courses. It is a comprehensive text that covers more ground than a typical one- or two-semester college-level precalculus course. The content is organized by clearly-defined learning objectives, and includes worked examples that demonstrate problem-solving approaches in an accessible way. Coverage and Scope Precalculus contains twelve chapters, roughly divided into three groups. Chapters 1-4 discuss various types of functions, providing a foundation for the remainder of the course. Chapter 1: Functions Chapter 2:

Linear Functions Chapter 3:
Polynomial and Rational
Functions Chapter 4:
Exponential and Logarithmic
Functions Chapters 5-8 focus on
Trigonometry. In Precalculus, we
approach trigonometry by first
introducing angles and the unit
circle, as opposed to the right
triangle approach more
commonly used in College
Algebra and Trigonometry
courses. Chapter 5:
Trigonometric Functions Chapter
6: Periodic Functions Chapter 7:
Trigonometric Identities and
Equations Chapter 8: Further
Applications of Trigonometry
Chapters 9-12 present some

advanced Precalculus topics that build on topics introduced in chapters 1-8. Most Precalculus syllabi include some of the topics in these chapters, but few include all. Instructors can select material as needed from this group of chapters, since they are not cumulative. Chapter 9: Systems of Equations and Inequalities Chapter 10: Analytic Geometry Chapter 11: Sequences, Probability and Counting Theory Chapter 12: Introduction to Calculus From Archimedes to Newton to Its Role in Science