

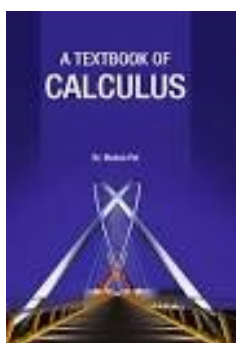


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NEW ACQUISITIONS

MATHEMATICS

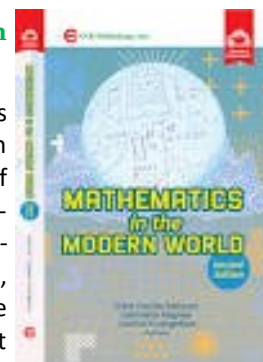


Pal, Madan, A Textbook of Calculus New Delhi: Nation Press, c2023 [CO QA 303.2 .P35 2023]

Calculus is the study of how things change. It provides a framework of modeling systems in which there is change, and a way to deduce the predictions of such models. Calculus—both derivative and integral—helped to improve the understanding of this important concept in terms of the curve of the Earth, the distance ship had to travel around a curve to get to a specific location, and even the alignment of the earth, seas, and ships in relation to the stars. Traditional calculus courses emphasize algebraic methods for performing differentiating and integrating. We will describe such methods, but show how you can perform differentiation and integration (and also solution of ordinary differential equations) on a computer spreadsheet with a tolerable amount of effort. We will also supply applets which do the same automatically with even less effort. With these applets, or a spreadsheet, you can apply the tools of calculus with greater ease and flexibility than has been possible before. Calculus is used in a multitude of fields that you wouldn't ordinarily think would make use of its concept. Among them are physics, engineering, economics, statistics, and medicine. Calculus is also used in such disparate areas as space travel, as well as determining how medications interact with the body, and even how to build safer structures. You'll understand why calculus is useful in so many area if you know a bit about its history as well as what it is designed to do and measure. Calculus marks the transition from working with the static nature of a function to analyzing the dynamic nature of a function. We will be moving away from Calculating the value of a function at a particular point and moving towards developing and understanding of how a function changes over a particular interval or overtime.

Baltazar, Ethel Cecille, Mathematics in the Modern World 2nd Edition Quezon City: C&E Publishing, Inc., c2024 [CO QA 37.2 .B35 2024]

What is mathematics? Where can it be found? What is it for? What is it about? How is it done? Who uses it? There are some of the essential questions that Mathematics in the Modern World aims to answer. The book covers the mandated topics and some of the elective ones which are all organized logically. In particular, topics include the nature of mathematics, mathematical language and symbols, problem-solving and reasoning, statistical tools, graphs, apportionment and voting, patterns and symmetries, coding, linear programming, and mathematical system. Written in a lucid manner, the book will surely enable students to understand not only the concepts presented but more importantly, their application to everyday lives. Finally, it offers a wide array of exercises designed to reinforce lessons and recognize and celebrate the place of mathematics in the modern world.



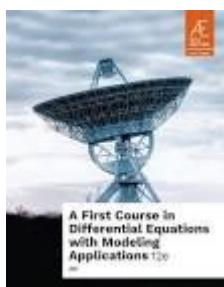
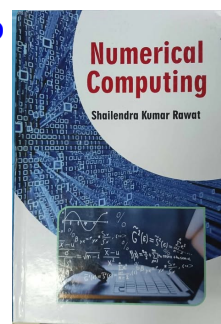


Godsil, Chris, Discrete Quantum walks on Graphs and Digraphs Cambridge, United Kingdom: Cambridge University Press, c2023 [CO QA 166 .G633 2023]

Discrete quantum walks are quantum analogues of classical random walks. They are an important tool in quantum computing and a number of algorithms can be viewed as discrete quantum walks, in particular Grover's search algorithm. These walks are constructed on an underlying graph, and so there is a relation between properties of walks and properties of the graph. This book studies the mathematical problems that arise from this connection, and the different classes of walks that arise. Written at a level suitable for graduate students in mathematics, the only prerequisites are linear algebra and basic graph theory; no prior knowledge of physics is required. The text serves as an introduction to this important and rapidly developing area for mathematicians and as a detailed reference for computer scientists and physicists working on quantum information theory.

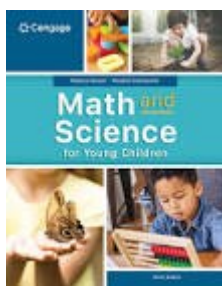
Rawat, Shailendra Kumar, Numeral Computing Noida: A.J.Books c2023 [CO QA 297 .R39 2023]

Numerical computing is an approach for solving complex mathematical problems using only simple arithmetic operations. The approach involves formulation of mathematical models physical situations that can be solved with arithmetic operations. It requires development, analysis and use of algorithms. Numerical computations invariably involve a large number of arithmetic calculations and , therefore, require fast and efficient computing devices. The microelectronic revolutions and the subsequent development of high, low cost personal computers have had a profound impact on the application of numerical computing methods to solve scientific problems. This will enable students and researchers to apply these iterative techniques to scientific and engineering problems. The text discusses in detail the methods of solving linear systems of equations, systems of non-linear equations, initial value problems and partial differential equations of all the three types by the use of iterative methods. This book provides a fundamentals introduction to numerical analysis suitable for undergraduate and postgraduate students in mathematics computer science and engineering. The numerical methods have always been useful for their role in the present-day scientific computations and research.



Zill, Dennis G., A First Course in Differential Equations with Modeling Applications 12e, Asia Edition Singapore: Cengage Learning Asia Pte Ltd c2024 [CO QA 372 .Z54 2024]

Authors of books live with the hope that someone actually reads them. Contrary to what you might believe, almost everything in a typical college-level mathematics text is written for you and not the instructor. True, the topics covered in the text are chosen to appeal to instructors because they make the decision on whether to use it in their classes, but everything written in it is aimed directly at you the student. So I want to encourage you—no, actually I want to tell you—to read this textbook! But do not read this text as you would a novel; you should not read it fast and you should not skip anything. Think of it as a workbook. By this I mean that mathematics should always be read with pencil and paper at the ready because, most likely, you will have to work your way through the examples and the discussion. Before attempting any problems in the section exercise sets, work through all the examples in that section.

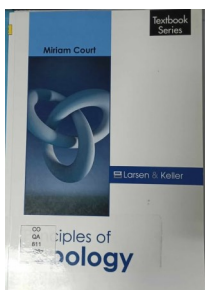
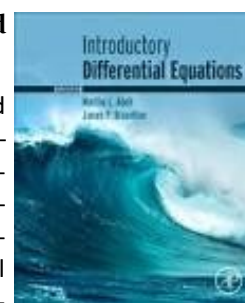


Howard, Rebecca, Math and Science for Young Children 9th Edition USA: Cengage, [c2025] [CO QA 135.6 .C43 2025]

Howard/Charlesworth's MATH AND SCIENCE FOR YOUNG CHILDREN, 9th EDITION, introduces you to engaging math and science experiences for early childhood and early elementary education programs. It provides an organized, sequential approach to creating a developmentally appropriate STEM curriculum. The content aligns with key guidelines and standards, including The National Association for the Education of Young Children's (NAEYC) Professional Standards and Competencies (2020); Developmentally Appropriate Practice (DAP) guidelines (2021); Common Core Mathematics Standards; and Next Generation Science Standards (NGSS). This edition also addresses STEM/STEAM and the essential domains of child growth and development during the crucial birth-through-eight age range. A valuable resource for the student/future teacher, working professional or involved parent, this edition emphasizes the interrelatedness of STEM content and how the content can be integrated into all other curriculum areas.

Abell, Martha L., Introductory Differential Equations 6th Edition United Kingdom: Academic Press, c2025 [CO QA 379 .A24 2025]

Introductory Differential Equations, Sixth Edition provides accessible explanations and many new, robust examples. This valuable resource is appropriate for one- or two-semester course in introductory ordinary differential equations (including Laplace transform) but is also ideal for a second course in Fourier series and boundary value problems for students with no background on the subject. The book provides the foundations to assist students in learning not only how to read and understand differential equations but also how to read technical material in more advanced texts as they progress through their studies.

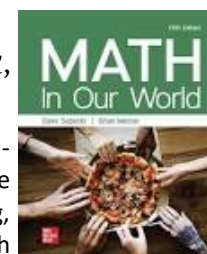


Court, Miriam, Principles of Topology New York, NY: Larsen & Keller, c2024 [CO QA 611 .C68 2024]

A subfield within mathematics that focuses on examining the properties of space that remain unchanged under continuous deformation, such as crumpling, stretching, and bending is called topology. Fundamental to this area are two key properties, namely, compactness and connectedness. Topology encompasses several significant subfields, including algebraic topology, differential topology, geometric topology, general topology. Topology is an upcoming field of science that has undergone rapid development over the past few decades. Most of the topics introduced in this book cover new techniques and the applications of topology. Those with an interest in this field would find this book helpful.

Sobecki, Dave, Math in our World 5th Edition New York, NY: McGraw Hill LLC, c2023 [CO QA 39.3 .S63 2023]

Math in our World is known for its engaging writing style, variety of exercises and examples, and applications to relevant scenarios—and the new fifth edition is no exception. The text is strengthened by its offering in ALEKS, now featuring Custom Question Authoring, Video Assignments, interactive tools, and more! ALEKS is a course assistant that helps math instructors forge Constructive Learning Paths for their students – blending personalized modules with instructor-driven assignments to ensure every student always has another block to build on their knowledge base.





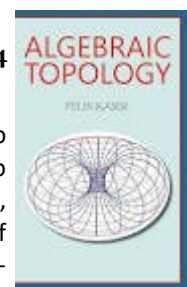
Enfield, Jacob, Mathematics of Game Development: A Collection of Applied Lessons Boca Raton, FL: CRC Press, [c2024] [CO QA 76.76.V54 E54 2024]

This introductory textbook introduces students to mathematical concepts and helps them to understand how they apply to the field of game development. This book covers the mathematical concepts commonly used in game development while providing opportunities to apply these concepts in the industry-standard Unity game engine.

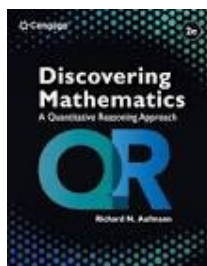
Most chapters cover mathematical concepts commonly used in game development, a downloadable game project that will provide a context to apply the math concepts learned, exercises for readers to practice the math concepts covered, and challenges for readers to further practice applying those concepts.

This book will be ideal for any game development student looking to gain a grounding in the most relevant mathematical concepts to support their trade. It will also be useful as a stepping stone to digesting more advanced mathematical concepts for game development.

Kaser, Felix, Algebraic Topology New Delhi: Discovery Publishing House, c2024 [CO QA 612 .K37 2024]



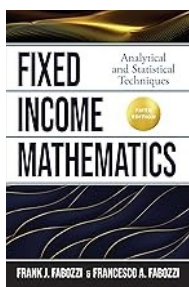
Algebraic Topology is a captivating field of mathematics that employs algebraic methods to study the properties of spaces. It amalgamates concepts from both algebra and topology to delve into the fundamental structure and characteristics of spaces, such as their connectivity, number of holes, and other global features. The book comprehensively covers a wide range of topics within the field of algebraic topology. It starts by delving into the historical development of topology, tracing its evolution from classic studies to its latest frontiers. The exploration then extends to pinned geometric configurations in both Euclidean space and Riemannian manifolds, uncovering the fascinating connection between geometry and topology. Furthermore, the book explores into the dynamics and cohomology of measured laminations, providing readers with insights into the interplay between dynamics and topology. It also discusses the operator topology for logarithmic infinitesimal generators, offering a fresh perspective on the relationship between algebra and topology. The book is primarily intended for mathematicians, researchers, and graduate students specializing in algebraic topology and related fields. It caters to those seeking an in-depth understanding of the subject and aims to provide a comprehensive overview of classical results as well as recent advancements.



Aufmann, Richard N., Discovering Mathematics: A Quantitative Reasoning Approach 2nd Edition USA: Cengage, c2025 [CO QA 35.3 .A9393 2025]

Aufmann's DISCOVERING MATHEMATICS: A QUANTITATIVE REASONING APPROACH, 2nd EDITION, with WebAssign, helps you learn mathematics in the context of the world around you. Focusing on topics relevant to your life and on developing critical-thinking skills that you can apply beyond the course, this text provides you with exactly what you need for the world around you in an approachable, engaging and streamlined format.





Fabozzi, Frank J., Fixed Income Mathematics: Analytical and Statistical Techniques New York: McGraw-Hill, c2023 [CO HG 4650 .F33 2023]

Fixed Income Mathematics is known around the world as the leading guide to understanding the concepts, valuation models for bonds with embedded option, mortgage-backed securities, asset-backed securities, and other fixed income instruments, and portfolio analytics.

Fixed Income Mathematics begins with basic concepts of the mathematics of finance, then systematically builds on them to reveal state-of-the-art methodologies for evaluating them and managing fixed-income portfolios. Concepts are illustrated with numerical examples and graphs, and you need only a basic knowledge of elementary algebra to understand them.

This new edition includes several entirely new chapters—Risk-Adjusted Returns, Empirical Duration, Analysis of Floating-Rate Securities, Holdings-Based Return Attribution Analysis, Returns-Based Style Attribution Analysis, Measuring Bond Liquidity, and Machine Learning

Zantema, Hans, Playing with Infinity: Turtles, Patterns, and Pictures Boca Raton, FL: CRC Press, c2024 [CO QA 9 .Z36 2024]

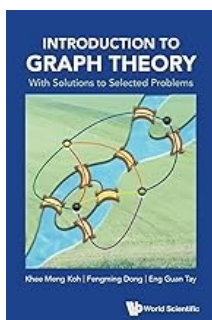
This is a book about infinity — specifically the infinity of numbers, and how one kind of infinity is greater than all the rest. Along the way the author will demonstrate how infinity can be made to create beautiful 'art', and how this process can help us to understand the fundamental nature of numbers. This book will provide a fascinating read for anyone interested in number theory, infinity, math art, and/or generative art, and could be used a valuable supplement to any course on these topics.



Features

- Beautiful examples of generative art.
 - Accessible to anyone with a reasonable high school level of mathematics.
- Full of challenges and puzzles to engage readers.





Koh, Khee Meng, Introduction to Graph Theory: with Solutions to Selected Problems New Jersey: World Scientific, c2024 [CO QA 166 .K643 2024]

Graph theory is an area in discrete mathematics which studies configurations (called graphs) involving a set of vertices interconnected by edges. This book is intended as a general introduction to graph theory. The book builds on the verity that graph theory even at high school level is a subject that lends itself well to the development of mathematical reasoning and proof. This is an updated edition of two books already published with World Scientific, i.e.,

WEFIntroduction to Graph Theory: H3 Mathematics & Introduction to Graph Theory: Solutions Manual. The new edition includes solutions and hints to selected problems. This combination allows the book to be used as a textbook for undergraduate students. Professors can select unanswered problems for tutorials while students have solutions for reference.

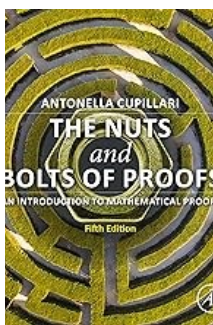
Enfield, Jacob Mathematics of Game Development: a Collection of Applied Lessons Boca Raton, FL: CRC Press, c2024 [CO QA 76.76.V54 E54 2024]

This introductory textbook introduces students to mathematical concepts and helps them to understand how they apply to the field of game development. This book covers the mathematical concepts commonly used in game development while providing opportunities to apply these concepts in the industry-standard Unity game engine.

Most chapters cover mathematical concepts commonly used in game development, a downloadable game project that will provide a context to apply the math concepts learned, exercises for readers to practice the math concepts covered, and challenges for readers to further practice applying those concepts.

This book will be ideal for any game development student looking to gain a grounding in the most relevant mathematical concepts to support their trade. It will also be useful as a stepping stone to digesting more advanced mathematical concepts for game development.





Cupillari, Antonella, The Nuts and Bolts of Proofs: an Introduction to Mathematical Proofs London: Academic Press, [c2024] [CO QA 9.54 .C86 2024]

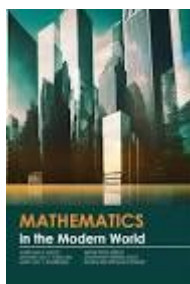
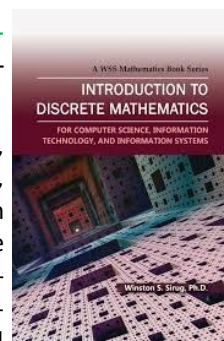
The Nuts and Bolts of Proofs: An Introduction to Mathematical Proofs, Fifth Edition provides basic logic of mathematical proofs and how they work. The book offers techniques for both reading and writing proofs, discusses techniques in proving if/then statements by contrapositive and proving by contradiction, includes the negation statement, and/or, examines various theorems, such as the if and only-if, equivalence theorems, existence theorems, and the uniqueness theorems. In addition, the use of counter examples, mathematical induction, composite statements including multiple hypothesis and multiple conclusions, and equality of numbers are also covered. The book also provides mathematical topics for practicing proof techniques.

Included here are the Cartesian products, indexed families, functions, and relations. The last chapter of the book provides review exercises on various topics. Undergraduate students in engineering and physical science will find this book accessible as well as invaluable.

Sirug, Winston S., Introduction to Discrete Mathematics for Computer Science, Information Technology, and Information Systems Intramuros, Manila: Mindshapers Co., Inc., c2023 [CO QA 39.3 .Si79 2023]

Introduction to Discrete Mathematics for Computer Science, Information Technology, and Information Systems is designed to give a background in Formal Logic, Set Theory, Number Theory, Relations and Functions, Counting Principles and Probability, Boolean Algebra, Matrices, Graphs, Trees, and Recurrence Relations. The text's primary objective is to develop the student's understanding of Discrete Mathematics and procedures needed to succeed in all Computer Science, Information Technology, and Information Systems, and other related course offerings of Higher Educational Institutions. It is intended that the text be adaptable to courses in Discrete Mathematics and Discrete Structures following the Commission on Higher Education Memorandum Order 15 series of 2015.

Each chapter starts with a list of learning outcomes that need to be met before moving to the next chapter of the text. It is immediately followed by the chapter course outline and inspiring quotations by known personalities



Ogo, Justin Ian N., Mathematics in the Modern World Intramuros, Manila: Mindshapers Co., Inc. c2023 [CO-FI QA 37.2 .O96 2023]

In understanding the modern world, mathematics has become an essential component in various fields. Mathematics, being the universal language of patterns and logic, continues to play an important role in shaping our world today. From the realms of science and technology to finance, engineering, and afar, mathematics serves as a powerful instrument for understanding problem-solving, and innovation.



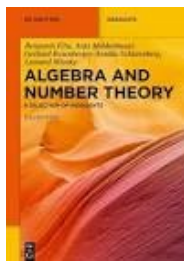
Sirug, Winston S., Mathematics of Investment 4th Edition Intramuros, Manila: Mindshapers Co., Inc., [c2023] [CO-FI HG 4515.3 .S57 2023]

Mathematics of Investment Fourth Edition is designed to give background in business mathematics taught in most business administration and other related programs in colleges and universities. The text's primary objective is to develop the student's understanding of the mathematical concepts and procedures needed to succeed in the fields of accounting, finance, management, marketing, and business information systems.

Reyes, Juan Apolinario C., Mathematics in the Modern World 2nd Edition Intramuros, Manila: Unlimited Books Library Services & Publishing Inc., c2023 [CO QA 37.2 .R33 2023]

This book is supported by Great Deeds Academy, a YouTube video channel devoted to mathematics.

While keeping an eye on the guidelines set by CHED, we exercised our discretion so that the cost of producing this book is not going to be very expensive. We did this by focusing only on topics that are within the teaching competence of many math teachers in the collegiate level. Some publishers opted to give teachers so many topics to choose from, but it made the production of their books very expensive. Also, students found them wasteful because teachers selected only the topics that they are competent to teach and comfortable discussing. This leaves many pages of the book unturned.



Fine, Benjamin, Algebra and Number Theory: A Selection of Highlights 2nd Edition Boston: Walter de Gruyter GmbH, c2023 [CO QA 150 .F56 2023]

In the two-volume set 'A Selection of Highlights' we present basics of mathematics in an exciting and pedagogically sound way. This volume examines fundamental results in Algebra and Number Theory along with their proofs and their history. In the second edition, we include additional material on perfect and triangular numbers. We also added new sections on elementary Group Theory, p-adic numbers, and Galois Theory.

- A true collection of mathematical gems in Algebra and Number Theory, including the integers, the reals, and the complex numbers, along with beautiful results from Galois Theory and associated geometric applications.

Valuable for lecturers, teachers and students of mathematics as well as for all who are mathematically interested.