

Discrete Mathematics The National Publishing Company

Eventually, you will totally discover a new experience and finishing by spending more cash. still when? attain you take that you require to acquire those all needs gone having significantly cash? Why dont you try to acquire something basic in the beginning? Thats something that will guide you to understand even more roughly speaking the globe, experience, some places, next history, amusement, and a lot more?

It is your extremely own mature to show reviewing habit. in the course of guides you could enjoy now is **Discrete Mathematics The National Publishing Company** below.

Angriff der Algorithmen - Cathy O'Neil

2017-08-21

Algorithmen nehmen Einfluss auf unser Leben: Von ihnen hängt es ab, ob man etwa einen Kredit für sein Haus erhält und wie viel man für die Krankenversicherung bezahlt. Cathy O'Neil,

ehemalige Hedgefonds-Managerin und heute Big-Data-Whistleblowerin, erklärt, wie Algorithmen in der Theorie objektive Entscheidungen ermöglichen, im wirklichen Leben aber mächtigen Interessen folgen. Algorithmen nehmen Einfluss auf die Politik,

gefährden freie Wahlen und manipulieren über soziale Netzwerke sogar die Demokratie. Cathy O'Neils dringlicher Appell zeigt, wie sie Diskriminierung und Ungleichheit verstärken und so zu Waffen werden, die das Fundament unserer Gesellschaft erschüttern.

Navigating Through Discrete Mathematics in Grades 6-12 - Eric W. Hart 2008

Offers ways of presenting and developing three topics emphasised in Principles and Standards for School Mathematics: counting, vertex-edge graphs and iterative and recursive processes.

Magical Mathematics - Persi Diaconis

2015-10-13

"Magical Mathematics reveals the secrets of amazing, fun-to-perform card tricks--and the profound mathematical ideas behind them--that will astound even the most accomplished magician. Persi Diaconis and Ron Graham provide easy, step-by-step instructions for each trick, explaining how to set up the effect and offering tips on what to say and do while

performing it. Each card trick introduces a new mathematical idea, and varying the tricks in turn takes readers to the very threshold of today's mathematical knowledge. For example, the Gilbreath principle--a fantastic effect where the cards remain in control despite being shuffled--is found to share an intimate connection with the Mandelbrot set. Other card tricks link to the mathematical secrets of combinatorics, graph theory, number theory, topology, the Riemann hypothesis, and even Fermat's last theorem. Diaconis and Graham are mathematicians as well as skilled performers with decades of professional experience between them. In this book they share a wealth of conjuring lore, including some closely guarded secrets of legendary magicians. Magical Mathematics covers the mathematics of juggling and shows how the I Ching connects to the history of probability and magic tricks both old and new. It tells the stories--and reveals the best tricks--of the eccentric and brilliant inventors of

mathematical magic. Magical Mathematics exposes old gambling secrets through the mathematics of shuffling cards, explains the classic street-gambling scam of three-card monte, traces the history of mathematical magic back to the thirteenth century and the oldest mathematical trick--and much more"-

ENC Focus - 2000

Soft Computing in Data Science - Michael W. Berry 2015-09-02

This book constitutes the refereed proceedings of the International Conference on Soft Computing in Data Science, SCDS 2015, held in Putrajaya, Malaysia, in September 2015. The 25 revised full papers presented were carefully reviewed and selected from 69 submissions. The papers are organized in topical sections on data mining; fuzzy computing; evolutionary computing and optimization; pattern recognition; human machine interface; hybrid methods.

Discrete Mathematics - Martin Aigner 2007
The advent of fast computers and the search for efficient algorithms revolutionized combinatorics and brought about the field of discrete mathematics. This book is an introduction to the main ideas and results of discrete mathematics, and with its emphasis on algorithms it should be interesting to mathematicians and computer scientists alike. The book is organized into three parts: enumeration, graphs and algorithms, and algebraic systems. There are 600 exercises with hints and solutions to about half of them. The only prerequisites for understanding everything in the book are linear algebra and calculus at the undergraduate level. Praise for the German edition ... This book is a well-written introduction to discrete mathematics and is highly recommended to every student of mathematics and computer science as well as to teachers of these topics. --Konrad Engel for MathSciNet
Martin Aigner is a professor of mathematics at the Free University of Berlin. He

received his PhD at the University of Vienna and has held a number of positions in the USA and Germany before moving to Berlin. He is the author of several books on discrete mathematics, graph theory, and the theory of search. The Monthly article Turan's graph theorem earned him a 1995 Lester R. Ford Prize of the MAA for expository writing, and his book Proofs from the BOOK with Gunter M. Ziegler has been an international success with translations into 12 languages.

Handbook of Research on Advanced Applications of Graph Theory in Modern Society - Pal, Madhumangal 2019-08-30

In the world of mathematics and computer science, technological advancements are constantly being researched and applied to ongoing issues. Setbacks in social networking, engineering, and automation are themes that affect everyday life, and researchers have been looking for new techniques in which to solve these challenges. Graph theory is a widely

studied topic that is now being applied to real-life problems. The Handbook of Research on Advanced Applications of Graph Theory in Modern Society is an essential reference source that discusses recent developments on graph theory, as well as its representation in social networks, artificial neural networks, and many complex networks. The book aims to study results that are useful in the fields of robotics and machine learning and will examine different engineering issues that are closely related to fuzzy graph theory. Featuring research on topics such as artificial neural systems and robotics, this book is ideally designed for mathematicians, research scholars, practitioners, professionals, engineers, and students seeking an innovative overview of graphic theory.

Basic Discrete Mathematics - Richard Kohar
2016-06-15

This lively introductory text exposes the student in the humanities to the world of discrete mathematics. A problem-solving based approach

grounded in the ideas of George Pólya are at the heart of this book. Students learn to handle and solve new problems on their own. A straightforward, clear writing style and well-crafted examples with diagrams invite the students to develop into precise and critical thinkers. Particular attention has been given to the material that some students find challenging, such as proofs. This book illustrates how to spot invalid arguments, to enumerate possibilities, and to construct probabilities. It also presents case studies to students about the possible detrimental effects of ignoring these basic principles. The book is invaluable for a discrete and finite mathematics course at the freshman undergraduate level or for self-study since there are full solutions to the exercises in an appendix. "Written with clarity, humor and relevant real-world examples, Basic Discrete Mathematics is a wonderful introduction to discrete mathematical reasoning."- Arthur Benjamin, Professor of Mathematics at Harvey Mudd College, and

author of The Magic of Math
Lattice Functions and Equations - Sergiu Rudeanu 2001-07-30

One of the chief aims of this self-contained monograph is to survey recent developments of Boolean functions and equations, as well as lattice functions and equations in more general classes of lattices. Lattice (Boolean) functions are algebraic functions defined over an arbitrary lattice (Boolean algebra), while lattice (Boolean) equations are equations expressed in terms of lattice (Boolean) functions. Special attention is also paid to consistency conditions and reproductive general solutions. Applications refer to graph theory, automata theory, synthesis of circuits, fault detection, databases, marketing and others. Lattice Functions and Equations updates and extends the author's previous monograph - Boolean Functions and Equations.

Teaching and Learning Discrete Mathematics Worldwide: Curriculum and

Research - Eric W. Hart 2017-12-09

This book discusses examples of discrete mathematics in school curricula, including in the areas of graph theory, recursion and discrete dynamical systems, combinatorics, logic, game theory, and the mathematics of fairness. In addition, it describes current discrete mathematics curriculum initiatives in several countries, and presents ongoing research, especially in the areas of combinatorial reasoning and the affective dimension of learning discrete mathematics. Discrete mathematics is the math of our time.' So declared the immediate past president of the National Council of Teachers of Mathematics, John Dossey, in 1991. Nearly 30 years later that statement is still true, although the news has not yet fully reached school mathematics curricula. Nevertheless, much valuable work has been done, and continues to be done. This volume reports on some of that work. It provides a glimpse of the state of the art in learning and

teaching discrete mathematics around the world, and it makes the case once again that discrete mathematics is indeed mathematics for our time, even more so today in our digital age, and it should be included in the core curricula of all countries for all students.

Discrete Mathematics - Rowan Garnier
1992-05-01

In a comprehensive yet easy-to-follow manner, Discrete Mathematics for New Technology follows the progression from the basic mathematical concepts covered by the GCSE in the UK and by high-school algebra in the USA to the more sophisticated mathematical concepts examined in the latter stages of the book. The book punctuates the rigorous treatment of theory with frequent uses of pertinent examples and exercises, enabling readers to achieve a feel for the subject at hand. The exercise hints and solutions are provided at the end of the book. Topics covered include logic and the nature of mathematical proof, set theory, relations and

functions, matrices and systems of linear equations, algebraic structures, Boolean algebras, and a thorough treatise on graph theory. Although aimed primarily at computer science students, the structured development of the mathematics enables this text to be used by undergraduate mathematicians, scientists, and others who require an understanding of discrete mathematics.

Discrete Mathematics and Game Theory -

Guillermo Owen 1999-11-30

This book describes highly applicable mathematics without using calculus or limits in general. The study agrees with the opinion that the traditional calculus/analysis is not necessarily the only proper grounding for academics who wish to apply mathematics. The choice of topics is based on a desire to present those facets of mathematics which will be useful to economists and social/behavioral scientists. The volume is divided into seven chapters. Chapter I presents a brief review of the solution

of systems of linear equations by the use of matrices. Chapter III introduces the theory of probability. The rest of the book deals with new developments in mathematics such as linear and dynamic programming, the theory of networks and the theory of games. These developments are generally recognized as the most important field in the 'new mathematics' and they also have specific applications in the management sciences.

Connecting Discrete Mathematics and Computer Science - David Liben-Nowell

2022-08-04

An approachable textbook connecting the mathematical foundations of computer science to broad-ranging and compelling applications throughout the field.

Discrete Encounters - Craig Bauer 2020-05-14

Eschewing the often standard dry and static writing style of traditional textbooks, *Discrete Encounters* provides a refreshing approach to discrete mathematics. The author blends

traditional course topics and applications with historical context, pop culture references, and open problems. This book focuses on the historical development of the subject and provides fascinating details of the people behind the mathematics, along with their motivations, deepening readers' appreciation of mathematics. This unique book covers many of the same topics found in traditional textbooks, but does so in an alternative, entertaining style that better captures readers' attention. In addition to standard discrete mathematics material, the author shows the interplay between the discrete and the continuous and includes high-interest topics such as fractals, chaos theory, cellular automata, money-saving financial mathematics, and much more. Not only will readers gain a greater understanding of mathematics and its culture, they will also be encouraged to further explore the subject. Long lists of references at the end of each chapter make this easy. Highlights: Features fascinating historical

context to motivate readers Text includes numerous pop culture references throughout to provide a more engaging reading experience Its unique topic structure presents a fresh approach The text's narrative style is that of a popular book, not a dry textbook Includes the work of many living mathematicians Its multidisciplinary approach makes it ideal for liberal arts mathematics classes, leisure reading, or as a reference for professors looking to supplement traditional courses Contains many open problems Profusely illustrated
Calculator-active Materials - 1997

Discrete Mathematics in the Schools - Joseph G. Rosenstein

This book provides teachers of all levels with a great deal of valuable material to help them introduce discrete mathematics into their classrooms.

Einführung in die Automatentheorie, formale Sprachen und Komplexitätstheorie -

John E. Hopcroft 2003

Contemporary Trends in Discrete Mathematics -

Ronald L. Graham 1999-01-01

Discrete mathematics stands among the leading disciplines of mathematics and theoretical computer science. This is due primarily to its increasing role in university curriculae and its growing importance in applications ranging from optimization to molecular biology. An inaugural conference was held cooperatively by DIMATIA and DIMACS to focus on the versatility, width, and depth of current progress in the subject area. This volume offers a well-balanced blend of research and survey papers reflecting the exciting, attractive topics in contemporary discrete mathematics. Discussed in the book are topics such as graph theory, partially ordered sets, geometrical Ramsey theory, computational complexity issues and applications.

Standards-based School Mathematics Curricula -

Sharon L. Senk 2020-07-25

The Curriculum and Evaluation Standards for School Mathematics published by the National Council of Teachers of Mathematics in 1989 set forth a broad vision of mathematical content and pedagogy for grades K-12 in the United States. These Standards prompted the development of Standards-based mathematics curricula. What features characterize Standards-based curricula? How well do such curricula work? To answer these questions, the editors invited researchers who had investigated the implementation of 12 different Standards-based mathematics curricula to describe the effects of these curricula on students' learning and achievement, and to provide evidence for any claims they made. In particular, authors were asked to identify content on which performance of students using Standards-based materials differed from that of students using more traditional materials, and content on which performance of these two groups of students was virtually identical. Additionally, four

scholars not involved with the development of any of the materials were invited to write critical commentaries on the work reported in the other chapters. Section I of Standards-Based School Mathematics Curricula provides a historical background to place the current curriculum reform efforts in perspective, a summary of recent recommendations to reform school mathematics, and a discussion of issues that arise when conducting research on student outcomes. Sections II, III, and IV are devoted to research on mathematics curriculum projects for elementary, middle, and high schools, respectively. The final section is a commentary by Jeremy Kilpatrick, Regents Professor of Mathematics Education at the University of Georgia, on the research reported in this book. It provides a historical perspective on the use of research to guide mathematics curriculum reform in schools, and makes additional recommendations for further research. In addition to the references provided at the end of

each chapter, other references about the Standards-based curriculum projects are provided at the end of the book. This volume is a valuable resource for all participants in discussions about school mathematics curricula--including professors and graduate students interested in mathematics education, curriculum development, program evaluation, or the history of education; educational policy makers; teachers; parents; principals and other school administrators. The editors hope that the large body of empirical evidence and the thoughtful discussion of educational values found in this book will enable readers to engage in informed civil discourse about the goals and methods of school mathematics curricula and related research.

Issues in Applied Mathematics: 2012 Edition - 2013-01-10

Issues in Applied Mathematics / 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information

about Mathematical Engineering. The editors have built Issues in Applied Mathematics: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Mathematical Engineering in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Applied Mathematics: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Discrete Mathematical Structures - B. V.

Senthil Kumar 2019-07-08

This book contains fundamental concepts on

discrete mathematical structures in an easy to understand style so that the reader can grasp the contents and explanation easily. The concepts of discrete mathematical structures have application to computer science, engineering and information technology including in coding techniques, switching circuits, pointers and linked allocation, error corrections, as well as in data networking, Chemistry, Biology and many other scientific areas. The book is for undergraduate and graduate levels learners and educators associated with various courses and programmes in Mathematics, Computer Science, Engineering and Information Technology. The book should serve as a text and reference guide to many undergraduate and graduate programmes offered by many institutions including colleges and universities. Readers will find solved examples and end of chapter exercises to enhance reader comprehension. Features Offers comprehensive coverage of basic ideas of Logic,

Mathematical Induction, Graph Theory, Algebraic Structures and Lattices and Boolean Algebra Provides end of chapter solved examples and practice problems Delivers materials on valid arguments and rules of inference with illustrations Focuses on algebraic structures to enable the reader to work with discrete structures

Modern Discrete Mathematics and Analysis

- Nicholas J. Daras 2018-07-05

A variety of modern research in analysis and discrete mathematics is provided in this book along with applications in cryptographic methods and information security, in order to explore new techniques, methods, and problems for further investigation. Distinguished researchers and scientists in analysis and discrete mathematics present their research. Graduate students, scientists and engineers, interested in a broad spectrum of current theories, methods, and applications in interdisciplinary fields will find this book

invaluable.

Cognitive Informatics, Computer Modelling, and Cognitive Science - G. R. Sinha

2020-04-07

Cognitive Informatics, Computer Modelling, and Cognitive Science: Theory, Case Studies, and Applications presents the theoretical background and history of cognitive science to help readers understand its foundations, philosophical and psychological aspects, and applications in a wide range of engineering and computer science case studies. Cognitive science, a cognitive model of the brain, knowledge representation, and information processing in the human brain are discussed, as is the theory of consciousness, neuroscience, intelligence, decision-making, mind and behavior analysis, and the various ways cognitive computing is used for information manipulation, processing and decision-making. Mathematical and computational models, structures and processes of the human brain are also covered,

along with advances in machine learning, artificial intelligence, cognitive knowledge base, deep learning, cognitive image processing and suitable data analytics. Identifies how foundational theories and concepts in cognitive science are applicable in other fields Includes a comprehensive review of cognitive science applications in multiple domains, applying it to neural engineering, robotics, computer science and STEM Includes models of brain processing, consciousness, decision-making, and more Provides in-depth technical coverage of cognitive informatics and computing, including coverage of cognitive knowledge base, information theory, cognitive machine learning and intelligence

Economic and Financial Modeling with Mathematica® - Hal R. Varian 2013-11-21

Mathematica is a computer program (software) for doing symbolic, numeric and graphical analysis of mathematical problems. In the hands of economists, financial analysts and other

professionals in econometrics and the quantitative sector of economic and financial modeling, it can be an invaluable tool for modeling and simulation on a large number of issues and problems, besides easily grinding out numbers, doing statistical estimations and rendering graphical plots and visuals.

Mathematica enables these individuals to do all of this in a unified environment. This book's main use is that of an applications handbook.

Modeling in Economics and Finance with Mathematica is a compilation of contributed papers prepared by experienced, "hands on" users of the Mathematica program. They come from

Triangulations - Jesus De Loera 2010-09-06
Triangulations presents the first comprehensive treatment of the theory of secondary polytopes and related topics. The text discusses the geometric structure behind the algorithms and shows new emerging applications, including hundreds of illustrations, examples, and

exercises.

Proceedings of the ... National Conference on Undergraduate Research - 1996

Logic and Discrete Mathematics - Winfried K. Grassmann 1996

For one/two-semester, sophomore-level courses in Discrete Mathematics. This text covers all the traditional topics of discrete mathematics -- logic, sets, relations, functions, and graphs -- and reflects recent trends in computer science.

Introduction to Discrete Mathematics with ISETL - William E. Fenton 1996-09-19

Intended for first- or second-year undergraduates, this introduction to discrete mathematics covers the usual topics of such a course, but applies constructivist principles that promote - indeed, require - active participation by the student. Working with the programming language ISETL, whose syntax is close to that of standard mathematical language, the student constructs the concepts in her or his mind as a

result of constructing them on the computer in the syntax of ISETL. This dramatically different approach allows students to attempt to discover concepts in a "Socratic" dialog with the computer. The discussion avoids the formal "definition-theorem" approach and promotes active involvement by the reader by its questioning style. An instructor using this text can expect a lively class whose students develop a deep conceptual understanding rather than simply manipulative skills. Topics covered in this book include: the propositional calculus, operations on sets, basic counting methods, predicate calculus, relations, graphs, functions, and mathematical induction.

DISCRETE MATHEMATICS, THIRD EDITION - CHANDRASEKARAN, N. 2022-04-04
Written with a strong pedagogical focus, the third edition of the book continues to provide an exhaustive presentation of the fundamental concepts of discrete mathematical structures and their applications in computer science and

mathematics. It aims to develop the ability of the students to apply mathematical thought in order to solve computation-related problems. The book is intended not only for the undergraduate and postgraduate students of mathematics but also, most importantly, for the students of Computer Science & Engineering and Computer Applications. The book is replete with features which enable the building of a firm foundation of the underlying principles of the subject and also provides adequate scope for testing the comprehension acquired by the students. Each chapter contains numerous worked-out examples within the main discussion as well as several chapter-end Supplementary Examples for revision. The Self-Test and Exercises at the end of each chapter include a large number of objective type questions and problems respectively. Answers to objective type questions and hints to exercises are also provided. All these pedagogic features, together with thorough coverage of the subject matter, make

this book a readable text for beginners as well as advanced learners of the subject. NEW TO THIS EDITION • Question Bank consisting of questions from various University Examinations • Updated chapters on Boolean Algebra, Graphs and Trees as per the recent syllabi followed in Indian Universities TARGET AUDIENCE • BE/B.Tech (Computer Science and Engineering) • MCA • M.Sc (Computer Science/Mathematics) Discrete Mathematics with Applications - Susanna S. Epp 1995 Author is an alumna of Evanston Township High School, class of 1960.

Discrete Mathematics for Computer Scientists - J. K. Truss 1999

This is a new edition of a successful introduction to discrete mathematics for computer scientists, updated and reorganised to be more appropriate for the modern day undergraduate audience. Discrete mathematics forms the theoretical basis for computer science and this text combines a rigorous approach to mathematical concepts

with strong motivation of these techniques via practical examples. Key Features Thorough coverage of all area of discrete mathematics, including logic, natural numbers, coding theory, combinatorics, sets, algebraic functions, partially ordered structures, graphs, formal machines & complexity theory Special emphasis on the central role of propositional & predicate logic Full chapters on algorithm analysis & complexity theory Introductory coverage of formal machines & coding theory Over 700 exercises Flexible structure so that the material can be easily adapted for different teaching styles. New to this Edition Improved treatment of induction Coverage of more 'basic' algebra List of symbols including page references for definition/explantation Modern text design and new exercises to aid student comprehension 0201360616B04062001

Information Security - the Next Decade - Jan H.P. Eloff 2016-01-09

These are the proceedings of the Eleventh

International Information Security Conference which was held in Cape Town, South Africa, May 1995. This conference addressed the information security requirements of the next decade and papers were presented covering a wide range of subjects including current industry expectations and current research aspects. The evolutionary development of information security as a professional and research discipline was discussed along with security in open distributed systems and security in groupware.

Teaching Secondary and Middle School Mathematics - Daniel J. Brahier 2020-04-01

Teaching Secondary and Middle School Mathematics combines the latest developments in research, technology, and standards with a vibrant writing style to help teachers prepare for the excitement and challenges of teaching secondary and middle school mathematics. The book explores the mathematics teaching profession by examining the processes of planning, teaching, and assessing student

progress through practical examples and recommendations. Beginning with an examination of what it means to teach and learn mathematics, the reader is led through the essential components of teaching, concluding with an examination of how teachers continue with professional development throughout their careers. Hundreds of citations are used to support the ideas presented in the text, and specific websites and other resources are presented for future study by the reader. Classroom scenarios are presented to engage the reader in thinking through specific challenges that are common in mathematics classrooms. The sixth edition has been updated and expanded with particular emphasis on the latest technology, resources, and standards. The reader is introduced to the ways that students think and how to best meet their needs through planning that involves attention to differentiation, as well as how to manage a classroom for success. Features include: The

entire text has been reorganized so that assessment takes a more central role in planning and teaching. Unit 3 (of 5) now addresses the use of summative and formative assessments to inform classroom teaching practices. ● A new feature, "Links and Resources," has been added to each of the 13 chapters. While the book includes a substantial listing of citations and resources after the chapters, five strongly recommended and practical resources are spotlighted at the end of each chapter as an easy reference to some of the most important materials on the topic. ● Approximately 150 new citations have either replaced or been added to the text to reflect the latest in research, materials, and resources that support the teaching of mathematics. ● A Quick Reference Guide has been added to the front of the book to assist the reader in identifying the most useful chapter features by topic. ● A significant revision to Chapter 13 now includes discussions of common teaching assessments used for field

experiences and licensure, as well as a discussion of practical suggestions for success in methods and student teaching experiences. ● Chapter 9 on the practical use of classroom technology has been revised to reflect the latest tools available to classroom teachers, including apps that can be run on handheld, personal devices. An updated Instructor's Manual features a test bank, sample classroom activities, Powerpoint slides, chapter summaries, and learning outcomes for each chapter, and can be accessed by instructors online at www.routledge.com/9780367146511

Lectures On Discrete Mathematics For Computer Science - Khoussainov Bakhadyr M
2012-03-21

This textbook presents fundamental topics in discrete mathematics introduced from the perspectives of a pure mathematician and an applied computer scientist. The synergy between the two complementary perspectives is seen throughout the book; key concepts are motivated

and explained through real-world examples, and yet are still formalized with mathematical rigor. The book is an excellent introduction to discrete mathematics for computer science, software engineering, and mathematics students. The first author is a leading mathematician in the area of logic, computability, and theoretical computer science, with more than 25 years of teaching and research experience. The second author is a computer science PhD student at the University of Washington specializing in database systems. The father-and-daughter team merges two different views to create a unified book for students interested in learning discrete mathematics, the connections between discrete mathematics and computer science, and the mathematical foundations of computer science. Readers will learn how to formally define abstract concepts, reason about objects (such as programs, graphs and numbers), investigate properties of algorithms, and prove their correctness. The textbook studies several

well-known algorithmic problems including the path problem for graphs and finding the greatest common divisor, inductive definitions, proofs of correctness of algorithms via loop invariants and induction, the basics of formal methods such as propositional logic, finite state machines, counting, probability, as well as the foundations of databases such as relational calculus.

Proceedings of the National Conference on Mathematical and Computational Models. - 2001

Theory of Computer Science - K. L. P. Mishra
2006-01-01

This Third Edition, in response to the enthusiastic reception given by academia and students to the previous edition, offers a cohesive presentation of all aspects of theoretical computer science, namely automata, formal languages, computability, and complexity. Besides, it includes coverage of mathematical preliminaries. NEW TO THIS

EDITION • Expanded sections on pigeonhole principle and the principle of induction (both in Chapter 2) • A rigorous proof of Kleene's theorem (Chapter 5) • Major changes in the chapter on Turing machines (TMs) – A new section on high-level description of TMs – Techniques for the construction of TMs – Multitape TM and nondeterministic TM • A new chapter (Chapter 10) on decidability and recursively enumerable languages • A new chapter (Chapter 12) on complexity theory and NP-complete problems • A section on quantum computation in Chapter 12. • KEY FEATURES • Objective-type questions in each chapter—with answers provided at the end of the book. • Eighty-three additional solved examples—added as Supplementary Examples in each chapter. • Detailed solutions at the end of the book to chapter-end exercises. The book is designed to meet the needs of the undergraduate and postgraduate students of computer science and engineering as well as those of the students

offering courses in computer applications.
Advances in Interdisciplinary Applied Discrete Mathematics -

Discrete Mathematics - Stephen A. Wiitala 1987

DISCRETE MATHEMATICS AND GRAPH

THEORY - PURNA CHANDRA BISWAL

2015-10-21

This textbook, now in its fourth edition, continues to provide an accessible introduction to discrete mathematics and graph theory. The introductory material on Mathematical Logic is followed by extensive coverage of combinatorics, recurrence relation, binary relations, coding theory, distributive lattice, bipartite graphs, trees, algebra, and Polya's counting principle. A number of selected results and methods of discrete mathematics are discussed in a logically coherent fashion from the areas of mathematical logic, set theory, combinatorics, binary relation and function, Boolean lattice, planarity, and

group theory. There is an abundance of examples, illustrations and exercises spread throughout the book. A good number of problems in the exercises help students test their knowledge. The text is intended for the undergraduate students of Computer Science and Engineering as well as to the students of Mathematics and those pursuing courses in the areas of Computer Applications and Information Technology. New to the Fourth Edition • Introduces new section on Arithmetic Function in Chapter 9. • Elaborates enumeration of spanning trees of wheel graph, fan graph and ladder graph. • Redistributes most of the problems given in exercises section-wise. • Provides many additional definitions, theorems, examples and exercises. • Gives elaborate hints for solving exercise problems.

Discrete Mathematics - Norman Biggs 1985

The widespread use of computers and the rapid growth in computer science have led to a new emphasis on discrete mathematics, a discipline

which deals with calculations involving a finite number of steps. This book provides a well-structured introduction to discrete mathematics, taking a self-contained approach that requires no ancillary knowledge of mathematics, avoids unnecessary abstraction, and incorporates a

wide range of topics, including graph theory, combinatorics, number theory, coding theory, combinatorial optimization, and abstract algebra. Amply illustrated with examples and exercises.