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Foundations of Discrete Mathematics-K. D. Joshi 1989 This Book Is Meant To Be More Than Just A Text In Discrete Mathematics. It Is A Forerunner Of Another Book Applied Discrete Structures By The Same Author. The Ultimate Goal Of The Two Books Are To Make A Strong Case For The Inclusion Of Discrete Mathematics In The Undergraduate Curricula Of Mathematics By Creating A Sequence Of Courses In Discrete Mathematics Parallel To The Traditional Sequence Of Calculus-Based Courses. The Present Book Covers The Foundations Of Discrete Mathematics In Seven Chapters. It Lays A Heavy Emphasis On Motivation And Attempts Clarity Without Sacrificing Rigour. A List Of Typical Problems Is Given In The First Chapter. These Problems Are Used Throughout The Book To

Motivate Various Concepts. A Review Of Logic Is Included To Gear The Reader Into A Proper Frame Of Mind. The Basic Counting Techniques Are Covered In Chapters 2 And 7. Those In Chapter 2 Are Elementary. But They Are Intentionally Covered In A Formal Manner So As To Acquaint The Reader With The Traditional Definition-Theorem-Proof Pattern Of Mathematics. Chapters 3 Introduces Abstraction And Shows How The Focal Point Of Today's Mathematics Is Not Numbers But Sets Carrying Suitable Structures. Chapter 4 Deals With Boolean Algebras And Their Applications. Chapters 5 And 6 Deal With More Traditional Topics In Algebra, Viz., Groups, Rings, Fields, Vector Spaces And Matrices. The Presentation Is Elementary And Presupposes No Mathematical Maturity On The Part Of The Reader. Instead, Comments Are Inserted Liberally To Increase His Maturity. Each Chapter Has Four Sections. Each Section Is Followed By Exercises (Of Various Degrees Of Difficulty) And By Notes And Guide To Literature. Answers To The Exercises Are Provided At The End Of The Book.

Introductory Discrete Mathematics-V. K . Balakrishnan 2012-04-30  
This concise, undergraduate-level text focuses on combinatorics, graph theory with applications to some standard network optimization problems, and algorithms. More than 200 exercises, many with complete solutions. 1991 edition.

Foundations of Discrete Mathematics with Algorithms and Programming-R. Balakrishnan 2018-10-26  
Discrete Mathematics has permeated the whole of mathematics so much so it has now come to be taught even at the high school level. This book presents the basics of Discrete Mathematics and its applications to day-to-day problems in several areas. This book is intended for undergraduate students of Computer Science, Mathematics and Engineering. A number of examples have been given to enhance the understanding of concepts. The programming languages used are Pascal and C.

Foundations of Discrete Mathematics-Albert D. Polimeni 1985  
Foundation Discrete Mathematics for Computing-DEXTER J. BOOTH 2013-12-19

Discrete Mathematics-Oscar Levin 2018-12-31  
Note: This is the 3rd edition. If you need the 2nd edition for a course you are taking, it

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can be found as a "other format" on amazon, or by searching its isbn: 1534970746 This gentle introduction to discrete mathematics is written for first and second year math majors, especially those who intend to teach. The text began as a set of lecture notes for the discrete mathematics course at the University of Northern Colorado. This course serves both as an introduction to topics in discrete math and as the "introduction to proof" course for math majors. The course is usually taught with a large amount of student inquiry, and this text is written to help facilitate this. Four main topics are covered: counting, sequences, logic, and graph theory. Along the way proofs are introduced, including proofs by contradiction, proofs by induction, and combinatorial proofs. The book contains over 470 exercises, including 275 with solutions and over 100 with hints. There are also Investigate! activities throughout the text to support active, inquiry based learning. While there are many fine discrete math textbooks available, this text has the following advantages: It is written to be used in an inquiry rich course. It is written to be used in a course for future math teachers. It is open source, with low cost print editions and free electronic editions. This third edition brings improved exposition, a new section on trees, and a bunch of new and improved exercises. For a complete list of changes, and to view the free electronic version of the text, visit the book's website at [discrete.openmathbooks.org](http://discrete.openmathbooks.org)

Fundamentals of Discrete Math for Computer Science-Tom Jenkyns 2012-10-16 This textbook provides an engaging and motivational introduction to traditional topics in discrete mathematics, in a manner specifically designed to appeal to computer science students. The text empowers students to think critically, to be effective problem solvers, to integrate theory and practice, and to recognize the importance of abstraction. Clearly structured and interactive in nature, the book presents detailed walkthroughs of several algorithms, stimulating a conversation with the reader through informal commentary and provocative questions. Features: no university-level background in mathematics required; ideally structured for classroom-use and self-study, with modular chapters following ACM curriculum recommendations; describes mathematical processes in an algorithmic manner; contains examples and exercises throughout the text, and highlights the most

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important concepts in each section; selects examples that demonstrate a practical use for the concept in question.

Discrete Mathematical Structures-B. V. Senthil Kumar 2019-07-12

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

A Short Course in Discrete Mathematics-Edward A. Bender 2005

What sort of mathematics do I need for computer science? In response to this frequently asked question, a pair of professors at the University of California at San Diego created this text. Its sources are two of the university's most basic courses: Discrete Mathematics, and Mathematics for Algorithm and System Analysis. Intended for use by sophomores in the first of a two-quarter sequence, the text assumes some familiarity with calculus. Topics include Boolean functions and computer arithmetic; logic; number theory and cryptography; sets and functions; equivalence and order; and induction, sequences, and series. Multiple choice questions for review appear throughout the text. Original 2005 edition. Notation Index. Subject Index.

Concrete Mathematics: A Foundation for Computer Science-Ronald

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L. Graham 1994

Mathematical Maturity via Discrete Mathematics-Vadim Ponomarenko 2019-11-13 Geared toward undergraduate majors in math, computer science, and computer engineering, this text employs discrete mathematics to introduce basic knowledge of proof techniques. Exercises with hints. 2019 edition.

Logic And Discrete Mathematics: A Computer Science Perspective-Grassmann 2007-09

Discrete Mathematics With Algorithms-Michael O. Albertson 1988-08-05 This first-year course in discrete mathematics requires no calculus or computer programming experience. The approach stresses finding efficient algorithms, rather than existential results. Provides an introduction to constructing proofs (especially by induction), and an introduction to algorithmic problem-solving. All algorithms are presented in English, in a format compatible with the Pascal programming language. Contains many exercises, with answers at the back of the book (detailed solutions being supplied for difficult problems).

Foundations for the Future in Mathematics Education-Richard A. Lesh 2020-10-07 The central question addressed in Foundations for the Future in Mathematics Education is this: What kind of understandings and abilities should be emphasized to decrease mismatches between the narrow band of mathematical understandings and abilities that are emphasized in mathematics classrooms and tests, and those that are needed for success beyond school in the 21st century? This is an urgent question. In fields ranging from aeronautical engineering to agriculture, and from biotechnologies to business administration, outside advisors to future-oriented university programs increasingly emphasize the fact that, beyond school, the nature of problem-solving activities has changed dramatically during the past twenty years, as powerful tools for computation, conceptualization, and communication have led to fundamental changes in the levels and types of mathematical understandings and abilities that are needed for success in such fields. For K-12 students and teachers, questions about the changing nature of mathematics (and mathematical thinking beyond school) might be rephrased to ask: If the goal is to create a mathematics curriculum that will be adequate to prepare students

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for informed citizenship—as well as preparing them for career opportunities in learning organizations, in knowledge economies, in an age of increasing globalization—how should traditional conceptions of the 3Rs be extended or reconceived? Overall, this book suggests that it is not enough to simply make incremental changes in the existing curriculum whose traditions developed out of the needs of industrial societies. The authors, beyond simply stating conclusions from their research, use results from it to describe promising directions for a research agenda related to this question. The volume is organized in three sections: \*Part I focuses on naturalistic observations aimed at clarifying what kind of “mathematical thinking” people really do when they are engaged in “real life” problem solving or decision making situations beyond school. \*Part II shifts attention toward changes that have occurred in kinds of elementary-but-powerful mathematical concepts, topics, and tools that have evolved recently—and that could replace past notions of “basics” by providing new foundations for the future. This section also initiates discussions about what it means to “understand” the preceding ideas and abilities. \*Part III extends these discussions about meaning and understanding—and emphasizes teaching experiments aimed at investigating how instructional activities can be designed to facilitate the development of the preceding ideas and abilities. Foundations for the Future in Mathematics Education is an essential reference for researchers, curriculum developers, assessment experts, and teacher educators across the fields of mathematics and science education.

Foundations of Non-stationary Dynamic Programming with Discrete Time Parameter-K. Hinderer 2012-12-06 The present work is an extended version of a manuscript of a course which the author taught at the University of Hamburg during summer 1969. The main purpose has been to give a rigorous foundation of stochastic dynamic programming in a manner which makes the theory easily applicable to many different practical problems. We mention the following features which should serve our purpose. a) The theory is built up for non-stationary models, thus making it possible to treat e.g. dynamic programming under risk, dynamic programming under uncertainty, Markovian models, stationary models, and models with finite horizon from a unified point of view. b) We use that notion of

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optimality (p-optimality) which seems to be most appropriate for practical purposes. c) Since we restrict ourselves to the foundations, we did not include practical problems and ways to their numerical solution, but we give (cf. section 8) a number of problems which show the diversity of structures accessible to non stationary dynamic programming. The main sources were the papers of Blackwell (65), Strauch (66) and Maitra (68) on stationary models with general state and action spaces and the papers of Dynkin (65), Hinderer (67) and Sirjaev (67) on non-stationary models. A number of results should be new, whereas most theorems constitute extensions (usually from stationary models to non-stationary models) or analogues to known results.

Discrete Mathematics Across the Curriculum, K-12-Margaret J. Kenney 1991 Discrete mathematics is the branch of mathematics that deals with arrangements of distinct objects. It includes a wide variety of topics and techniques that arise in everyday life, such as how to find the best route from one city to another, where the objects are cities arranged on a map. It also includes how to count the number of different combinations of toppings for pizzas, how best to schedule a list of tasks to be done, and how computers store and retrieve arrangements of information on a screen.

Essential Discrete Mathematics for Computer Science-Harry Lewis 2019-03-19 A more intuitive approach to the mathematical foundation of computer science Discrete mathematics is the basis of much of computer science, from algorithms and automata theory to combinatorics and graph theory. This textbook covers the discrete mathematics that every computer science student needs to learn. Guiding students quickly through thirty-one short chapters that discuss one major topic each, this flexible book can be tailored to fit the syllabi for a variety of courses. Proven in the classroom, Essential Discrete Mathematics for Computer Science aims to teach mathematical reasoning as well as concepts and skills by stressing the art of proof. It is fully illustrated in color, and each chapter includes a concise summary as well as a set of exercises. The text requires only precalculus, and where calculus is needed, a quick summary of the basic facts is provided. Essential Discrete Mathematics for Computer Science is the ideal introductory textbook for standard undergraduate courses, and is also suitable

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for high school courses, distance education for adult learners, and self-study. The essential introduction to discrete mathematics Features thirty-one short chapters, each suitable for a single class lesson Includes more than 300 exercises Almost every formula and theorem proved in full Breadth of content makes the book adaptable to a variety of courses Each chapter includes a concise summary Solutions manual available to instructors

Introductory Discrete Mathematics-V. K. Balakrishnan 2012-04-30

This concise, undergraduate-level text focuses on combinatorics, graph theory with applications to some standard network optimization problems, and algorithms. More than 200 exercises, many with complete solutions. 1991 edition.

Discrete Mathematics in the Schools-Joseph G. Rosenstein 2000

This volume is a collection of articles written by experienced primary, secondary, and collegiate educators. The book explains why discrete mathematics should be taught in K-12 classrooms and offers practical guidance on how to do so. In this book, teachers at all levels will find a great deal of valuable material to help them introduce discrete mathematics in their classrooms. One main article provides a comprehensive and detailed view of discrete mathematics for K-12. Another surveys the resources that are available for teachers. School and district curriculum leaders will find material that addresses how discrete mathematics can be introduced into their curricula. College faculty members will find ideas and topics that can be incorporated into a variety of courses. It features: classroom activities and an annotated list of resources; authors who are directors of innovative programs and who are well known for their work; a description of discrete mathematics providing the opportunity for a fresh start for students who have been previously unsuccessful in mathematics; discussion on discrete mathematics as it is used to achieve the goals of the current effort to improve mathematics education; guidance on topics, resources and teaching; and a valuable guide for both pre-service and in-service professional development.

Discrete Mathematics for Computer Science-Gary Haggard 2005

Master the fundamentals of discrete mathematics with DISCRETE MATHEMATICS FOR COMPUTER SCIENCE with Student Solutions Manual CD-ROM! An increasing number of computer scientists from

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diverse areas are using discrete mathematical structures to explain concepts and problems and this mathematics text shows you how to express precise ideas in clear mathematical language. Through a wealth of exercises and examples, you will learn how mastering discrete mathematics will help you develop important reasoning skills that will continue to be useful throughout your career.

FUNDAMENTALS OF DISCRETE MATHEMATICAL STRUCTURES-

K. R. CHOWDHARY 2015-01-02 This updated text, now in its Third Edition, continues to provide the basic concepts of discrete mathematics and its applications at an appropriate level of rigour. The text teaches mathematical logic, discusses how to work with discrete structures, analyzes combinatorial approach to problem-solving and develops an ability to create and understand mathematical models and algorithms essentials for writing computer programs. Every concept introduced in the text is first explained from the point of view of mathematics, followed by its relation to Computer Science. In addition, it offers excellent coverage of graph theory, mathematical reasoning, foundational material on set theory, relations and their computer representation, supported by a number of worked-out examples and exercises to reinforce the students' skill. Primarily intended for undergraduate students of Computer Science and Engineering, and Information Technology, this text will also be useful for undergraduate and postgraduate students of Computer Applications. New to this Edition Incorporates many new sections and subsections such as recurrence relations with constant coefficients, linear recurrence relations with and without constant coefficients, rules for counting and shorting, Peano axioms, graph connecting, graph scanning algorithm, lexicographic shorting, chains, antichains and order-isomorphism, complemented lattices, isomorphic order sets, cyclic groups, automorphism groups, Abelian groups, group homomorphism, subgroups, permutation groups, cosets, and quotient subgroups. Includes many new worked-out examples, definitions, theorems, exercises, and GATE level MCQs with answers.

Discrete Mathematics and Its Applications-Kenneth H. Rosen 2008

Discrete Mathematics for Computer Scientists-Cliff L Stein

2011-11-21 This is the eBook of the printed book and may not

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include any media, website access codes, or print supplements that may come packaged with the bound book. Stein/Drysdale/Bogart's Discrete Mathematics for Computer Scientists is ideal for computer science students taking the discrete math course. Written specifically for computer science students, this unique textbook directly addresses their needs by providing a foundation in discrete math while using motivating, relevant CS applications. This text takes an active-learning approach where activities are presented as exercises and the material is then fleshed out through explanations and extensions of the exercises.

Foundations of Combinatorics with Applications-Edward A. Bender 2013-01-18 Suitable for upper-level undergraduates and graduate students in engineering, science, and mathematics, this introductory text explores counting and listing, graphs, induction and recursion, and generating functions. Includes numerous exercises (some with solutions), notes, and references.

Discrete Mathematics-Norman L. Biggs 2002-12-19 Discrete mathematics is a compulsory subject for undergraduate computer scientists. This new edition includes new chapters on statements and proof, logical framework, natural numbers and the integers and updated exercises from the previous edition.

Mathematical Foundations of Computer Science 2002-Krzysztof Diks 2002-08-14 Presents a collection of papers from the International Symposium on Mathematical Foundations of Computer Science covering such topics as discrete mathematics, graph theory, and algorithms.

Discrete Mathematics and Its Applications-Kenneth Rosen 2011 Discrete Mathematics and its Applications, Seventh Edition, is intended for one- or two-term introductory discrete mathematics courses taken by students from a wide variety of majors, including computer science, mathematics, and engineering. This renowned best-selling text, which has been used at over 500 institutions around the world, gives a focused introduction to the primary themes in a discrete mathematics course and demonstrates the relevance and practicality of discrete mathematics to a wide a wide variety of real-world applications ... from computer science to data networking, to psycholo.

Introduction to Discrete Mathematics for Software Engineering-

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1986-12-05

Theoretical and Mathematical Foundations of Computer Science- Qihai Zhou 2011-10-29 This book constitutes the refereed post-proceedings of the Second International Conference on Theoretical and Mathematical Foundations of Computer Science, ICTMF 2011, held in Singapore in May 2011. The conference was held together with the Second International Conference on High Performance Networking, Computing, and Communication systems, ICHCC 2011, which proceedings are published in CCIS 163. The 84 revised selected papers presented were carefully reviewed and selected for inclusion in the book. The topics covered range from computational science, engineering and technology to digital signal processing, and computational biology to game theory, and other related topics.

Discrete Mathematical Structures for Computer Science-Bernard Kolman 1987

Mathematical Foundations of Computer Science 1999-Symposium on Mathematical Foundations of Computer Science 1999 szklar 1999-08-18 This volume contains papers selected for presentation during the 24th International Symposium on Mathematical Foundations of Computer Science held on September 6-10, 1999 in Szklarska Por^ba, Poland. The symposium, organized alternately in the Czech Republic, Slovakia, and Poland, focuses on theoretical aspects and mathematical foundations of computer science. The scientific program of the symposium consists of five invited talks given by Martin Dyer, Dexter Kozen, Giovanni Manzini, Sergio Rajsbaum, and Mads Tofte, and 37 accepted papers chosen out of 68 submissions. The volume contains all accepted contributed papers, and three invited papers. The contributed papers have been selected for presentation based on their scientific quality, novelty, and interest for the general audience of MFCS participants. Each paper has been reviewed by at least three independent referees — PC members and/or sub-referees appointed by them. The papers were selected for presentation during a fully electronic virtual meeting of the program committee on May 7, 1999. The virtual PC meeting was supported by software written by Artur Zgoda, Ph.D. student at the University of Wroclaw. The entire communication and access to quite a sensitive database at PC headquarters in Wroclaw

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was secured by cryptographic protocols based on technology of certificates.

Applied Discrete Structures-Ken Levasseur 2012

A Spiral Workbook for Discrete Mathematics-Harris Kwong

2015-11-06 A Spiral Workbook for Discrete Mathematics covers the standard topics in a sophomore-level course in discrete mathematics: logic, sets, proof techniques, basic number theory, functions, relations, and elementary combinatorics, with an emphasis on motivation. The text explains and clarifies the unwritten conventions in mathematics, and guides the students through a detailed discussion on how a proof is revised from its draft to a polished form. Hands-on exercises help students understand a concept soon after learning it. The text adopts a spiral approach: many topics are revisited multiple times, sometimes from a different perspective or at a higher level of complexity, in order to slowly develop the student's problem-solving and writing skills.

Mathematical Foundations of Computer Networking-Srinivasan

Keshav 2012-04-20 "To design future networks that are worthy of society's trust, we must put the 'discipline' of computer networking on a much stronger foundation. This book rises above the considerable minutiae of today's networking technologies to emphasize the long-standing mathematical underpinnings of the field." -Professor Jennifer Rexford, Department of Computer Science, Princeton University "This book is exactly the one I have been waiting for the last couple of years. Recently, I decided most students were already very familiar with the way the networks but were not being taught the fundamentals-the math. This book contains the knowledge for people who will create and understand future communications systems." -Professor Jon Crowcroft, The Computer Laboratory, University of Cambridge The Essential Mathematical Principles Required to Design, Implement, or Evaluate Advanced Computer Networks Students, researchers, and professionals in computer networking require a firm conceptual understanding of its foundations. Mathematical Foundations of Computer Networking provides an intuitive yet rigorous introduction to these essential mathematical principles and techniques. Assuming a basic grasp of calculus, this book offers sufficient detail to serve as the only reference many readers will

need. Each concept is described in four ways: intuitively; using appropriate mathematical notation; with a numerical example carefully chosen for its relevance to networking; and with a numerical exercise for the reader. The first part of the text presents basic concepts, and the second part introduces four theories in a progression that has been designed to gradually deepen readers' understanding. Within each part, chapters are as self-contained as possible. The first part covers probability; statistics; linear algebra; optimization; and signals, systems, and transforms. Topics range from Bayesian networks to hypothesis testing, and eigenvalue computation to Fourier transforms. These preliminary chapters establish a basis for the four theories covered in the second part of the book: queueing theory, game theory, control theory, and information theory. The second part also demonstrates how mathematical concepts can be applied to issues such as contention for limited resources, and the optimization of network responsiveness, stability, and throughput.

Discrete Mathematics-John A. Dossey 2006 The strong algorithmic emphasis of Discrete Mathematics is independent of a specific programming language, allowing students to concentrate on foundational problem-solving and analytical skills. Instructors get the topical breadth and organizational flexibility to tailor the course to the level and interests of their students. Algorithms are presented in English, eliminating the need for knowledge of a particular programming language. Computational and algorithmic exercise sets follow each chapter section and supplementary exercises and computer projects are included in the end-of-chapter material. This Fifth Edition features a new Chapter 3 covering matrix codes, error correcting codes, congruence, Euclidean algorithm and Diophantine equations, and the RSA algorithm. MARKET: Intended for use in a one-semester introductory course in discrete mathematics.

Probabilistic Methods for Algorithmic Discrete Mathematics-Michel Habib 2013-03-14 Leave nothing to chance. This cliché embodies the common belief that randomness has no place in carefully planned methodologies, every step should be spelled out, each dotted and each ticked. In discrete mathematics at least, nothing could be further from the truth. Introducing random choices into

algorithms can improve their performance. The application of probabilistic tools has led to the resolution of combinatorial problems which had resisted attack for decades. The chapters in this volume explore and celebrate this fact. Our intention was to bring together, for the first time, accessible discussions of the disparate ways in which probabilistic ideas are enriching discrete mathematics. These discussions are aimed at mathematicians with a good combinatorial background but require only a passing acquaintance with the basic definitions in probability (e.g. expected value, conditional probability). A reader who already has a firm grasp on the area will be interested in the original research, novel syntheses, and discussions of ongoing developments scattered throughout the book. Some of the most convincing demonstrations of the power of these techniques are randomized algorithms for estimating quantities which are hard to compute exactly. One example is the randomized algorithm of Dyer, Frieze and Kannan for estimating the volume of a polyhedron. To illustrate these techniques, we consider a simple related problem. Suppose  $S$  is some region of the unit square defined by a system of polynomial inequalities:  $P_i(x, y) \sim 0$ .

Mathematics for Computer Science-Eric Lehman 2017-03-08 This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural induction; state machines and invariants; recurrences; generating functions.

Discrete Structures-Harriet Fell 2015-12-31 Discrete Structures introduces readers to the mathematical structures and methods that form the foundation of computer science and features multiple techniques that readers will turn to regularly throughout their careers in computer and information sciences. Over the course of five modules, students learn specific skills including binary and modular arithmetic, set notation, methods of counting, evaluating sums, and solving recurrences. They study the basics of probability, proof by induction, growth of functions, and analysis techniques.

The book also discusses general problem-solving techniques that are widely applicable to real problems. Each module includes motivation applications, technique, theory, and further opportunities for application. Informed by extensive experience teaching in computer science programs, Discrete Structures has been developed specifically for first-year students in those programs. The material is also suitable for courses in computer engineering, as well as those for students who are transferring from other disciplines and just beginning their computer science or engineering education. Harriet Fell holds a Ph.D. in mathematics from the Massachusetts Institute of Technology, and is a professor emerita of computer science at Northeastern University. Dr. Fell is a double patent holder who has received grants from the National Institute of Health, the National Science Foundation, and the U.S. Department of Education. Javed A. Aslam holds a Ph.D. in computer science from the Massachusetts Institute of Technology and is a professor of computer science at Northeastern University and the associate dean of faculty in the College of Computer and Information Science. Dr. Aslam's research interests include information retrieval, machine learning, and the design and analysis of algorithms.

Computational Discrete Mathematics-Sriram Pemmaraju  
2009-10-15 This book was first published in 2003. Combinatorica, an extension to the popular computer algebra system Mathematica®, is the most comprehensive software available for teaching and research applications of discrete mathematics, particularly combinatorics and graph theory. This book is the definitive reference/user's guide to Combinatorica, with examples of all 450 Combinatorica functions in action, along with the associated mathematical and algorithmic theory. The authors cover classical and advanced topics on the most important combinatorial objects: permutations, subsets, partitions, and Young tableaux, as well as all important areas of graph theory: graph construction operations, invariants, embeddings, and algorithmic graph theory. In addition to being a research tool, Combinatorica makes discrete mathematics accessible in new and exciting ways to a wide variety of people, by encouraging computational experimentation and visualization. The book contains no formal proofs, but enough discussion to

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understand and appreciate all the algorithms and theorems it contains.

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/explation Modern text design and new exercises to aid student comprehension  
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