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Boolean Algebra and
Switching Circuits
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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

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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,

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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

The first volume in this new
series explores, through
extensive co-operation, new
ways of achieving the
integration of science in all its
diversity. The book offers

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essays from important and influential philosophers in contemporary philosophy, discussing a range of topics from philosophy of science to epistemology, philosophy of logic and game theoretical approaches. It will be of interest to philosophers, computer scientists and all others interested in the scientific rationality.

Discrete Mathematics and
Combinatorics

Digital Logic Design MCQs

Computerized Manufacturing
Automation

Logic, Epistemology, and the
Unity of Science

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A Beginner ' s Guide to
Discrete Mathematics
Automating Manufacturing
Systems with Plcs
**Focusing on skills and
concepts used routinely
on the job, this
introduction/review of
electronics and computer
math concentrates on
topics of special interest
to the "technician"--
including binary and
decimal notation and
operations and (basic
level) concrete numbers.
Hands on in approach, it
features 300 example
problems, 1300 practice**

problems (with solutions), and 2600 problems--ranging from simple to complex. Encourages calculator use throughout, and provides instructions for both the Texas Instruments TI-36X and the Casio fx-115W. Decimal Number System. Powers of Ten. Units and Prefixes. Fractions, Decimals, and Percents. Algebraic Terms: Roots and Powers. Fractions and Literal Numbers. Linear Equations. Factoring Algebraic

Expressions. Fractional Equations. DC Circuit Analysis: Kirchhoffs Laws, OHM's Law, Circuit Theorems. Graphing. Simultaneous Linear Equations. Complex Numbers. The Right Triangle. Trigonometric Identities. AC Fundamentals. AC Circuit Analysis: Series Circuits and Parallel Circuits. Filters. Logarithms. Logarithmic Equations. Applications of Logarithms. Computer Number Systems. Boolean Algebra. Karnaugh Maps.

**Introduction to Statistics.
For electronics and
computer technicians.
Changes in the present
challenge us to
reinterpret the past, but
historians have not yet
come to grips with the
convergence of
computing, media, and
communications
technology. Today these
things are inextricably
intertwined, in
technologies such as the
smartphone and internet,
in convergent industries,
and in social practices.
Yet they remain three**

distinct historical subfields, tilted by different groups of scholars using different tools. We often call this conglomeration “the digital,” recognizing its deep connection to the technology of digital computing.

Unfortunately, interdisciplinary studies of digital practices, digital methods, or digital humanities have rarely been informed by deep engagement with the history of computing.

Contributors

to this volume have come together to reexamine an apparently familiar era in the history of computing through new lenses, exploring early digital computing and engineering practice as digital phenomena rather than as engines of mathematics and logic. Most focus on the period 1945 to 1960, the era in which the first electronic digital computers were created and the computer industry began to develop. Because digitality is first and

foremost a way of reading objects and encoding information within them, we are foregrounding topics that have until now been viewed as peripheral in the history of computing: betting odds calculators, card file systems, program and data storage, programmable calculators, and digital circuit design practices. Reconceptualizing the “history of computing” as study of the “early digital” decenters the stored program

computer, repositioning it as one of many digital technologies.

Concise text begins with overview of elementary mathematical concepts and outlines theory of Boolean algebras; defines operators for elimination, division, and expansion; covers syllogistic reasoning, solution of Boolean equations, functional deduction.

1990 edition.

**Understanding
Engineering Mathematics
Principles and
Applications**

**Canadian Mathematical
Bulletin**
**Bird's Comprehensive
Engineering Mathematics
A Beginner's Introduction
Boolean Reasoning**

Originally published in 1989 The Industrialization of Intelligence is a spirited blend of the principles of social science and computer technology. Critically praised in the United States and England by leading lights both literary and technological, it develops an original and provocative model of the interplay between computer systems and social systems. Noah Kennedy has composed a compelling story from key episodes in the development of the computer, and coupled it with a probing analysis of the true role of automation in modern society. The result firmly plants computer technology in the soil of western

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culture and denies the shrill claims that the information age represents a sudden break with the historical past. He starts with biographical vignettes from the lives of five pivotal thinkers, weaving their crucial insights into the larger fabric of contemporary and future society. He then gives a provocative forecast of the role of artificial intelligence in future society, and examines the probable impact of new computer technologies on employment and on the relationships between nations. The result is a reasoned understanding of our imminent future through a thoughtful analysis of our historical past.

Studying engineering, whether it is mechanical, electrical or civil relies heavily on an understanding of mathematics. This new textbook clearly demonstrates the relevance of mathematical principles and shows how to apply them to solve real-life engineering problems. It deliberately starts at

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an elementary level so that students who are starting from a low knowledge base will be able to quickly get up to the level required. Students who have not studied mathematics for some time will find this an excellent refresher. Each chapter starts with the basics before gently increasing in complexity. A full outline of essential definitions, formulae, laws and procedures are introduced before real world situations, practicals and problem solving demonstrate how the theory is applied. Focusing on learning through practice, it contains examples, supported by 1,600 worked problems and 3,000 further problems contained within exercises throughout the text. In addition, 34 revision tests are included at regular intervals. An interactive companion website is also provided containing 2,750 further problems with worked solutions and instructor materials

PPI ' s FE Electrical and Computer Practice

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Problems FE Electrical and Computer Practice Problems offers comprehensive practice for the NCEES FE Electrical and Computer exam. This FE book is part of a complete learning management system designed to help you pass the FE exam the first time. Topics Covered Communications Computer Networks Computer Systems Control Systems Digital Systems Electromagnetics Electronics Engineering Economics Engineering Sciences Ethics and Professional Practice Linear Systems Mathematics Power Probability and Statistics Properties of Electrical Materials Signal Processing Software Development Key Features Over 450 three-minute, multiple-choice, exam-like practice problems to illustrate the type of problems you ' ll encounter during the exam. Consistent with the NCEES exam content and format. Clear, complete, and easy-to-follow solutions to deepen your

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understanding of all knowledge areas covered in the exam. Step-by-step calculations using equations and nomenclature from the NCEES FE Reference Handbook to familiarize you with the reference you ' ll have on exam day.

Binding: Paperback Publisher: PPI, A Kaplan Company

Introduction to Logic Design

Mathematical Principles of Human Conceptual Behavior

The Structural Nature of Conceptual Representation and Processing

Cardinal Invariants On Boolean Algebras

The Industrialization of Intelligence

Discrete Mathematics for Computer Science

This book is concerned with cardinal number valued functions defined for any Boolean algebra. Examples of such

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functions are independence, which assigns to each Boolean algebra the supremum of the cardinalities of its free subalgebras, and cellularity, which gives the supremum of cardinalities of sets of pairwise disjoint elements. Twenty-one such functions are studied in detail, and many more in passing. The questions considered are the behaviour of these functions under algebraic operations such as products, free

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products, ultraproducts, and their relationships to one another. Assuming familiarity with only the basics of Boolean algebras and set theory, through to simple infinite combinatorics and forcing, the book reviews current knowledge about these functions, giving complete proofs for most facts. A special feature of the book is the attention given to open problems, of which 97 are formulated. Based on Cardinal Functions on

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Boolean Algebras (1990)
by the same author, the
present work is nearly
twice the size of the
original work. It
contains solutions to
many of the open
problems which are
discussed in greater
detail than before.
Among the new topics
considered are
ultraproducts and
FedorchukA-s theorem,
and there is a more
complete treatment of
the cellularity of free
products. Diagrams at
the end of the book

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summarize the relationships between the functions for many important classes of Boolean algebras, including tree algebras and superatomic algebras. Review: "This book is an indispensable tool for anyone working in Boolean algebra, and is also recommended for set-theoretic topologists." - Zentralblatt MATH

Studying engineering, whether it is mechanical, electrical or civil, relies heavily

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on an understanding of mathematics. This textbook clearly demonstrates the relevance of mathematical principles and shows how to apply them in real-life engineering problems. It deliberately starts at an elementary level so that students who are starting from a low knowledge base will be able to quickly get up to the level required. Students who have not studied mathematics for some time will find this

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an excellent refresher. Each chapter starts with the basics before gently increasing in complexity. A full outline of essential definitions, formulae, laws and procedures is presented, before real world practical situations and problem solving demonstrate how the theory is applied. Focusing on learning through practice, it contains simple explanations, supported by 1600 worked problems and over 3600 further

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problems contained within 384 exercises throughout the text. In addition, 35 Revision tests together with 9 Multiple-choice tests are included at regular intervals for further strengthening of knowledge. An interactive companion website provides material for students and lecturers, including detailed solutions to all 3600 further problems.

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(Computer Science Quick
Study Guides &
Terminology Notes to
Review)
Discrete Mathematical
Structures**

With an abundance of insightful

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examples, problems, and computer experiments, Introduction to Logic Design provides a balanced, easy-to-read treatment of the fundamental theory of logic functions and applications to the design of digital devices and systems. Requiring no prior knowledge of electrical circuits or electronics, it supplies the

Now in its eighth edition, Higher Engineering Mathematics has helped thousands of students succeed in their exams. Theory is kept to a minimum, with the emphasis firmly placed on problem-solving skills, making this a thoroughly practical introduction to the advanced engineering mathematics that students need to master. The extensive and thorough

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*This volume is a collection of surveys of research problems in topology and its applications. The topics covered include general topology, set-theoretic topology, continuum theory, topological algebra, dynamical systems, computational topology and functional analysis. * New surveys of research problems in topology * New perspectives on classic problems **

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*Representative surveys of research
groups from all around the world*

Practice Problems in Number

Systems, Logic, and Boolean Algebra

*Accounting, Statistical Services, Data
Processing*

*Programming with MATLAB for
Scientists*

*Employment, Education, and the
Workplace*

*Discrete Mathematics with
Applications*

Boolean Algebra for Computer Logic

*Safety Professionals know that the
best solution to preventing accidents in*

the workplace boils down to

*engineering out the hazards. If there
isn't any hazard or exposure, there*

can't be any accident. If you accept the

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premise that the ultimate method for protecting workers on the job requires the removal or engineering-out of hazards in the workplace, this text is for you. The Handbook of Safety Engineering: Principles and Applications provides instruction in basic engineering principles, the sciences, cyber operations, math operations, mechanics, fire science (water hydraulics, etc.), electrical safety, and the technical and administrative aspects of the safety profession in an accessible and straightforward way. It serves students of safety and practitioners in the field_especially those studying for professional certification examinations_by placing more emphasis on engineering aspects and

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less on regulatory and administrative requirements. This practical handbook will serve as an important reference guide for students, professors, industrial hygienists, senior level undergraduate and graduate students in safety and industrial engineering, science and engineering professionals, safety researchers, engineering designers, human factor specialists, and all other safety practitioners.

"Artificial Intelligence" (AI) a term coined in the 1950s actually dates back as far as 1943. Now very much in the public consciousness, AI research has fallen in and out of favour over the years. Routledge Library Editions: Artificial Intelligence (10 Volumes) brings together as one set, or individual volumes, a small

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interdisciplinary series of previously out-of-print titles, originally published between 1970 and 1994. Covering ground in computer science, literature, philosophy, psychology, psychotherapy and sociology, this set is a fascinating insight into the development of ideas surrounding AI.

Digital Logic Design MCQs: Multiple Choice Questions and Answers PDF (Quiz & Practice Tests with Answer Key), Digital Logic Design Quick Study Guide & Terminology Notes to Review includes revision guide for problem solving with 700 solved MCQs. "Digital Logic Design MCQ" book with answers PDF covers basic concepts, theory and analytical assessment tests. "Digital Logic Design Quiz" PDF book helps to practice test

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multiplexers, state machine diagrams,
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Introduction to asynchronous sequential logic, analysis of asynchronous sequential logic, circuits with latches, design procedure of asynchronous sequential logic, and transition table. Solve "Binary Systems MCQ" PDF book with answers, chapter 3 to practice test questions: Binary systems problems, complements in binary systems, character alphanumeric codes, arithmetic addition, binary codes, binary numbers, binary storage and registers, code, decimal codes, definition of binary logic, digital computer and digital system, error detection code, gray code, logic gates, number base conversion, octal and hexadecimal numbers, radix complement, register transfer, signed binary number,

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implementations. Solve "Standard Graphic Symbols MCQ" PDF book with answers, chapter 11 to practice test questions: Dependency notation symbols, qualifying symbols, and rectangular shape symbols. Solve "Synchronous Sequential Logics MCQ" PDF book with answers, chapter 12 to practice test questions: Introduction to synchronous sequential logic, flip-flops in synchronous sequential logic, clocked sequential circuits, clocked sequential circuits analysis, design of counters, design procedure in sequential logic, flip-flops excitation tables, state reduction and assignment, and triggering of flip-flops.

Practice Problems in Number Systems, Logic, and Boolean Algebra, By Ed

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Bukstein

The Handbook of Safety Engineering

The Logic of Boolean Equations

Open Problems in Topology II

*Schaum's Outline of Boolean Algebra
and Switching Circuits*

Learning Directory

The ability to learn concepts lies at the very core of human cognition, enabling us to efficiently classify, organize, identify, and store complex information. In view of the basic role that concepts play in our everyday physical and mental lives, the fields of cognitive science and psychology face three long standing challenges: discovering the laws that govern concept learning and categorization behavior in organisms, showing how they inform other areas of

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cognitive research, and describing them with the mathematical systematicity and precision found in the physical sciences. In light of these theoretical and methodological shortcomings, this volume will introduce a set of general mathematical principles for predicting and explaining conceptual behavior. The author's theory is based on seven fundamental constructs of universal science: invariance, complexity, information, similarity, dissimilarity, pattern, and representation. These constructs are joined by a novel mathematical framework that does not depend on probability theory, and derives key results from conceptual behavior research with other key areas of cognitive research such as pattern

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perception, similarity assessment, and contextual choice. The result is a unique and systematic unifying foundation for cognitive science in the tradition of classical physics. Did you know that games and puzzles have given birth to many of today's deepest mathematical subjects? Now, with Douglas Ensley and Winston Crawley's *Introduction to Discrete Mathematics*, you can explore mathematical writing, abstract structures, counting, discrete probability, and graph theory, through games, puzzles, patterns, magic tricks, and real-world problems. You will discover how new mathematical topics can be applied to everyday situations, learn how to work with proofs, and develop your problem-solving skills

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along the way. Online applications help improve your mathematical reasoning. Highly intriguing, interactive Flash-based applications illustrate key mathematical concepts and help you develop your ability to reason mathematically, solve problems, and work with proofs. Explore More icons in the text direct you to online activities at

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Discrete Mathematics and Combinatorics provides a concise and practical introduction to the core components of discrete

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mathematics, featuring a balanced mix of basic theories and applications. The book covers both fundamental concepts such as sets and logic, as well as advanced topics such as graph theory and Turing machines. The example-driven approach will help readers in understanding and applying the concepts. Other pedagogical tools - illustrations, practice questions, and suggested reading - facilitate learning and mastering the subject."--Cover

Routledge Library Editions:

Artificial Intelligence

Finite and Discrete Math Problem Solver

Supplement I

Boolean Algebra and Its Applications

Computerized manufacturing

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**automation : employment,
education, and the workplace.
Mind and Machine in the Modern
Age**

This introduction to discrete mathematics is aimed at freshmen and sophomores in mathematics and computer science. It begins with a survey of number systems and elementary set theory before moving on to treat data structures, counting, probability, relations and functions, graph theory, matrices, number theory and cryptography.

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The end of each section contains problem sets with selected solutions, and good examples occur throughout the text.

Introductory treatment begins with set theory and fundamentals of Boolean algebra, proceeding to concise accounts of applications to symbolic logic, switching circuits, relay circuits, binary arithmetic, and probability theory. 1961 edition.

h Problem Solver is an insightful and essential

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Perfect for undergraduate and graduate studies. Here in this highly useful reference is the finest overview of finite and discrete math currently available, with hundreds of finite and discrete math problems that cover everything from graph theory and statistics to probability and Boolean algebra. Each problem is clearly solved with step-by-step detailed solutions. DETAILS - The PROBLEM SOLVERS are unique - the ultimate in

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the advanced in each subject. - They work exceptionally well with any text in its field. - PROBLEM SOLVERS are available in 41 subjects. - Each PROBLEM SOLVER is prepared by supremely knowledgeable experts. - Most are over 1000 pages. - PROBLEM SOLVERS are not meant to be read cover to cover. They offer whatever may be needed at a given time. An excellent index helps to locate specific problems rapidly. TABLE OF CONTENTS Introduction

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BOOK IS FOR Students
have generally found
finite and discrete math
difficult subjects to
understand and learn.
Despite the publication
of hundreds of textbooks

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in this field, each one intended to provide an improvement over previous textbooks, students of finite and discrete math continue to remain perplexed as a result of numerous subject areas that must be remembered and correlated when solving problems. Various interpretations of finite and discrete math terms also contribute to the difficulties of mastering the subject. In a study of finite and discrete math, REA found

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the following basic reasons underlying the inherent difficulties of finite and discrete math: No systematic rules of analysis were ever developed to follow in a step-by-step manner to solve typically encountered problems. This results from numerous different conditions and principles involved in a problem that leads to many possible different solution methods. To prescribe a set of rules for each of the possible

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variations would involve an enormous number of additional steps, making this task more burdensome than solving the problem directly due to the expectation of much trial and error. Current textbooks normally explain a given principle in a few pages written by a finite and discrete math professional who has insight into the subject matter not shared by others. These explanations are often written in an abstract

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manner that causes confusion as to the principle's use and application.

Explanations then are often not sufficiently detailed or extensive enough to make the reader aware of the wide range of applications and different aspects of the principle being studied. The numerous possible variations of principles and their applications are usually not discussed, and it is left to the reader to discover this while

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doing exercises.

Accordingly, the average student is expected to rediscover that which has long been established and practiced, but not always published or adequately explained.

The examples typically following the explanation of a topic are too few in number and too simple to enable the student to obtain a thorough grasp of the involved principles. The explanations do not provide sufficient basis

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to solve problems that may be assigned for homework or given on examinations. Poorly solved examples such as these can be presented in abbreviated form which leaves out much explanatory material between steps, and as a result requires the reader to figure out the missing information. This leaves the reader with an impression that the problems and even the subject are hard to learn - completely the opposite of what an

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example is supposed to do. Poor examples are often worded in a confusing or obscure way. They might not state the nature of the problem or they present a solution, which appears to have no direct relation to the problem. These problems usually offer an overly general discussion - never revealing how or what is to be solved. Many examples do not include accompanying diagrams or graphs, denying the reader the

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exposure necessary for drawing good diagrams and graphs. Such practice only strengthens understanding by simplifying and organizing finite and discrete math processes. Students can learn the subject only by doing the exercises themselves and reviewing them in class, obtaining experience in applying the principles with their different ramifications. In doing the exercises by

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themselves, students find that they are required to devote considerable more time to finite and discrete math than to other subjects, because they are uncertain with regard to the selection and application of the theorems and principles involved. It is also often necessary for students to discover those "tricks" not revealed in their texts (or review books) that make it possible to solve problems easily.

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Students must usually resort to methods of trial and error to discover these "tricks," therefore finding out that they may sometimes spend several hours to solve a single problem. When reviewing the exercises in classrooms, instructors usually request students to take turns in writing solutions on the boards and explaining them to the class. Students often find it difficult to explain in a manner that holds the interest

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of the class, and enables the remaining students to follow the material written on the boards. The remaining students in the class are thus too occupied with copying the material off the boards to follow the professor's explanations. This book is intended to aid students in finite and discrete math overcome the difficulties described by supplying detailed illustrations of the solution methods

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that are usually not apparent to students. Solution methods are illustrated by problems that have been selected from those most often assigned for class work and given on examinations. The problems are arranged in order of complexity to enable students to learn and understand a particular topic by reviewing the problems in sequence. The problems are illustrated with detailed, step-by-step explanations, to

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save the students large amounts of time that is often needed to fill in the gaps that are usually found between steps of illustrations in textbooks or review/outline books. The staff of REA considers finite and discrete math a subject that is best learned by allowing students to view the methods of analysis and solution techniques. This learning approach is similar to that practiced in various

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scientific laboratories, particularly in the medical fields. In using this book, students may review and study the illustrated problems at their own pace; students are not limited to the time such problems receive in the classroom. When students want to look up a particular type of problem and solution, they can readily locate it in the book by referring to the index that has been extensively prepared. It

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is also possible to locate a particular type of problem by glancing at just the material within the boxed portions. Each problem is numbered and surrounded by a heavy black border for speedy identification.

Electronics and Computer
Math

An Example-Based
Introduction

Mathematical Reasoning
and Proof with Puzzles,
Patterns, and Games

Higher Engineering
Mathematics

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On which are Founded the
Mathematical Theories of
Logic and Probabilities

This book offers an introduction to
the basics of MATLAB

programming to scientists and
engineers. The author leads with
engaging examples to build a
working knowledge, specifically
geared to those with science and
engineering backgrounds. The
reader is empowered to model and
simulate real systems, as well as
present and analyze everyday data
sets. In order to achieve those
goals, the contents bypass
excessive "under the hood" details,
and instead gets right down to the
essential, practical foundations for

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successful programming and modeling. Readers will benefit from the following features: Teaches programming to scientists and engineers using a problem-based approach, leading with illustrative and interesting examples.

Emphasizes a hands-on approach, with "must know" information and minimal technical details. Utilizes examples from science and engineering to showcase the application of learned concepts on real problems. Showcases modeling of real systems, gradually advancing from simpler to more challenging problems. Highlights the practical uses of data processing and analysis in everyday life.

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Discrete Mathematics for Computer Science: An Example-Based Introduction is intended for a first- or second-year discrete mathematics course for computer science majors. It covers many important mathematical topics essential for future computer science majors, such as algorithms, number representations, logic, set theory, Boolean algebra, functions, combinatorics, algorithmic complexity, graphs, and trees. Features Designed to be especially useful for courses at the community-college level Ideal as a first- or second-year textbook for computer science majors, or as a general introduction to discrete mathematics Written to be

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accessible to those with a limited mathematics background, and to aid with the transition to abstract thinking Filled with over 200 worked examples, boxed for easy reference, and over 200 practice problems with answers Contains approximately 40 simple algorithms to aid students in becoming proficient with algorithm control structures and pseudocode Includes an appendix on basic circuit design which provides a real-world motivational example for computer science majors by drawing on multiple topics covered in the book to design a circuit that adds two eight-digit binary numbers Jon Pierre Fortney graduated from the University of Pennsylvania in

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1996 with a BA in Mathematics and Actuarial Science and a BSE in Chemical Engineering. Prior to returning to graduate school, he worked as both an environmental engineer and as an actuarial analyst. He graduated from Arizona State University in 2008 with a PhD in Mathematics, specializing in Geometric Mechanics. Since 2012, he has worked at Zayed University in Dubai. This is his second mathematics textbook.

Designed to provide a strong mathematics background for computer science, engineering, and mathematics students. Topics in the text are drawn from logic, Boolean algebra, combinatorics, automata, and graph theory. A

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chapter on automata theory and formal languages is included along with programming notes using Pascal language constructions to show how programming and mathematics are related. Logic is introduced briefly in chapter one and then expanded upon in chapter four.

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Discrete Mathematics

Exploring the Early Digital
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An in depth examination of
manufacturing control systems using
structured design methods. Topics
include ladder logic and other IEC
61131 standards, wiring,

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communication, analog IO, structured programming, and communications. Allen Bradley PLCs are used extensively through the book, but the formal design methods are applicable to most other PLC brands. A full version of the book and other materials are available on-line at <http://engineeronadisk.com>