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Nota di bibliografia	Includes bibliographical references (p. 899-905) and indexes.
Nota di contenuto	Front Cover; Discrete Mathematics with Applications; Copyright Page; Table of Contents; Preface; A Word to the Student; Chapter 1. The Language of Logic; 1.1 Propositions; 1.2 Logical Equivalences; 1.3 Quantifiers; 1.4 Arguments (optional); 1.5 Proof Methods; Chapter Summary; Review Exercises; Supplementary Exercises; Computer Exercises; Exploratory Writing Projects; Enrichment Readings; Chapter 2. The Language of Sets; 2.1 The Concept of a Set; 2.2 Operations with Sets; 2.3 Computer Operations with Sets (optional); 2.4 The Cardinality of a Set; 2.5 Recursively Defined Sets; Chapter Summary Review Exercises Supplementary Exercises; Computer Exercises; Exploratory Writing Projects; Enrichment Readings; Chapter 3. Functions and Matrices; 3.1 The Concept of a Function; 3.2 Special Functions; 3.3 Properties of Functions; 3.4 The Pigeonhole Principle; 3.5 Composition of Functions; 3.6 Sequences and the Summation Notation; 3.7 Matrices; Chapter Summary; Review Exercises; Supplementary Exercises; Computer Exercises; Exploratory Writing Projects; Enrichment Readings; Chapter 4. Induction and Algorithms; 4.1 The Division Algorithm; 4.2 Divisibility Properties; 4.3 Nondecimal Bases 4.4 Mathematical Induction 4.5 Algorithm Correctness; 4.6 The Growth of Functions; 4.7 Complexities of Algorithms (optional); Chapter Summary; Review Exercises; Supplementary Exercises; Computer

Exercises; Exploratory Writing Projects; Enrichment Readings; Chapter 5. Recursion; 5.1 Recursively Defined Functions; 5.2 Solving Recurrence Relations; 5.3 Solving Recurrence Relations Revisited; 5.4 Generating Functions; 5.5 Recursive Algorithms; 5.6 Correctness of Recursive Algorithms; 5.7 Complexities of Recursive Algorithms (optional); Chapter Summary; Review Exercises; Supplementary Exercises Computer Exercises Exploratory Writing Projects; Enrichment Readings; Chapter 6. Combinatorics and Discrete Probability; 6.1 The Fundamental Counting Principles; 6.2 Permutations; 6.3 Derangements; 6.4 Combinations; 6.5 Permutations and Combinations with Repetitions; 6.6 The Binomial Theorem; 6.7 The Generalized Inclusion-Exclusion Principle (GIEP) (optional); 6.8 Discrete Probability (optional); 6.9 Additional Topics in Probability (optional); Chapter Summary; Review Exercises; Supplementary Exercises; Computer Exercises; Exploratory Writing Projects; Enrichment Readings; Chapter 7. Relations 7.1 Boolean Matrices 7.2 Relations and Digraphs; 7.3 Computer Representations of Relations (optional); 7.4 Properties of Relations; 7.5 Operations on Relations; 7.6 The Connectivity Relation (optional); 7.7 Transitive Closure (optional); 7.8 Equivalence Relations; 7.9 Partial and Total Orderings; Chapter Summary; Review Exercises; Supplementary Exercises; Computer Exercises; Exploratory Writing Projects; Enrichment Readings; Chapter 8. Graphs; 8.1 Graphs; 8.2 Computer Representations of Graphs (optional); 8.3 Isomorphic Graphs; 8.4 Paths, Cycles, and Circuits
8.5 Eulerian and Hamiltonian Graphs

Sommario/riassunto

This approachable text studies discrete objects and the relationships that bind them. It helps students understand and apply the power of discrete math to digital computer systems and other modern applications. It provides excellent preparation for courses in linear algebra, number theory, and modern/abstract algebra and for computer science courses in data structures, algorithms, programming languages, compilers, databases, and computation.* Covers all recommended topics in a self-contained, comprehensive, and understandable format for students and new professionals * Emphasizes pr