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Nota di contenuto	Introduction -- “Doing” Mathematics: A Toolkit for Mathematical Reasoning -- Sets and Their Algebras: The Stem Cells of Mathematics -- Numbers I: The Basics of Our Number System -- Arithmetic: Putting Numbers to Work -- Summations: Complex Operations from Simple Components -- The Vertigo of Infinity: Handling the Very Large and the Infinite -- Numbers II: Building the Integers and Building with the Integers -- Recurrences: Rendering Complex Structure Manageable -- Numbers III: Operational Representations and Their Consequences -- The Art of Counting: Combinatorics, Probability, and Statistics -- Graphs I: Representing Relationships Mathematically -- Graphs II: Graphs Within Computation and Communication -- Solutions to Exercises -- App. A, Pairing Functions -- App. B, A Deeper Look at the Fibonacci Numbers -- App. C, Two Recurrence-Defined Number Families -- App. D, Signed-Digit Numerals: Carry-Free Addition -- App. E, The Diverse Delights of de Bruijn Networks -- List of Symbols -- References -- Index.
Sommario/riassunto	In this book the authors aim to endow the reader with an operational, conceptual, and methodological understanding of the discrete mathematics that can be used to study, understand, and perform computing. They want the reader to understand the elements of computing, rather than just know them. The basic topics are presented in a way that encourages readers to develop their personal way of

thinking about mathematics. Many topics are developed at several levels, in a single voice, with sample applications from within the world of computing. Extensive historical and cultural asides emphasize the human side of mathematics and mathematicians. By means of lessons and exercises on “doing” mathematics, the book prepares interested readers to develop new concepts and invent new techniques and technologies that will enhance all aspects of computing. The book will be of value to students, scientists, and engineers engaged in the design and use of computing systems, and to scholars and practitioners beyond these technical fields who want to learn and apply novel computational ideas.