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Nota di contenuto	The Mathematics of Infinity: A Guide to Great Ideas; Contents; Preface for the Second Edition; 1 Logic; 1.1 Axiomatic Method; 1.2 Tabular Logic; 1.3 Tautology; 1.4 Logical Strategies; 1.5 Implications From Implications; 1.6 Universal Quantifiers; 1.7 Fun With Language and Logic; 2 Sets; 2.1 Elements and Predicates; 2.2 Equality; 2.3 Cartesian Products; 2.4 Power Sets; 2.5 Something From Nothing; 2.6 Indexed Families of Sets; 3 Functions; 3.1 Functional Preliminaries; 3.2 Images and Preimages; 3.3 One-to-One and Onto Functions; 3.4 Bijections; 3.5 Inverse Functions; 4 Counting Infinite Sets 4.1 Finite Sets 4.2 Hilbert's Infinite Hotel; 4.3 Equivalent Sets and Cardinality; 5 Infinite Cardinals; 5.1 Countable Sets; 5.2 Uncountable Sets; 5.3 Two Infinities; 5.4 Power Sets; 5.5 The Arithmetic of Cardinals; 6 Well-Ordered Sets; 6.1 Successors of Elements; 6.2 Constructing Well Ordered Sets; 6.3 Cardinals as Ordinals; 6.4 Magnitude versus Cardinality; 7 Inductions and Numbers; 7.1 Mathematical Induction; 7.2 Sums of Powers of Integers; 7.3 Transfinite Induction; 7.4 Mathematical Recursion; 7.5 Number Theory; 7.6 The Fundamental Theorem of

Arithmetic; 7.7 Perfect Numbers

8 Prime Numbers 8.1 Prime Number Generators; 8.2 The Prime Number Theorem; 8.3 Products of Geometric Series; 8.4 The Riemann Zeta Function; 8.5 Real Numbers; 9 Logic and Meta-Mathematics; 9.1 The Collection of All Sets; 9.2 Other Than True or False; 9.3 The Logic of A Theory of Everything; 9.3.1 Godel's Incompleteness Theorem; 9.3.2 Logically Closed Sets; 9.3.3 Applications; Bibliography; Index

Sommario/riassunto

Praise for the First Edition "... an enchanting book for those people in computer science or mathematics who are fascinated by the concept of infinity."-Computing Reviews "... a very well written introduction to set theory . . . easy to read and well suited for self-study . . . highly recommended."-Choice The concept of infinity has fascinated and confused mankind for centuries with theories and ideas that cause even seasoned mathematicians to wonder. The Mathematics of Infinity: A Guide to Great Ideas, Second Edition uniquely explores how we can manipulate these idea
