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Disciplina	510
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Preface to the Second Edition -- Preface to the First Edition -- Contents -- Part I The Intuitive Background -- 1 Mathematical Thinking -- 2 Number Systems -- Part II The Beginnings of Formalisation -- 3 Sets -- 4 Relations -- 5 Functions -- 6 Mathematical Logic -- 7 Mathematical Proof -- Part III The Development of Axiomatic Systems -- 8 Natural Numbers and Proof by Induction -- 9 Real Numbers -- 10 Real Numbers as a Complete Ordered Field -- 11 Complex Numbers and Beyond -- Part IV Using Axiomatic Systems -- 12 Axiomatic Systems, Structure Theorems, and Flexible Thinking -- 13 Permutations and Groups -- 14 Cardinal Numbers -- 15 Infinitesimals -- Part V Strengthening the Foundations -- 16 Axioms for Set Theory -- Appendix: How to Read Proofs: The 'Self-Explanation' Strategy -- References and Further Reading -- Index.
Sommario/riassunto	The transition from school mathematics to university mathematics is seldom straightforward. Students are faced with a disconnect between the algorithmic and informal attitude to mathematics at school, versus a new emphasis on proof, based on logic, and a more abstract development of general concepts, based on set theory. The authors have many years' experience of the potential difficulties involved, through teaching first-year undergraduates and researching the ways

in which students and mathematicians think. The book explains the motivation behind abstract foundational material based on stude
