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Nota di contenuto	A Set Theory -- 1 Basic Concepts of Set Theory -- 2 Relations and Functions -- 3 Properties of Relations -- 4 Infinities -- B Logic and Formal Systems -- 5 Basic Concepts of Logic and Formal Systems -- 6 Statement Logic -- 7 Predicate Logic -- 8 Formal Systems, Axiomatization, and Model Theory -- C Algebra -- 9 Basic Concepts of Algebra -- 10 Operational Structures -- 11 Lattices -- 12 Boolean and Heyting Algebras -- D English As A Formal Language -- 13 Basic Concepts -- 14 Generalized Quantifiers -- 15 Intensionality -- E Languages, Grammars, and Automata -- 16 Basic Concepts -- 17 Finite Automata, Regular Languages and Type 3 Grammars -- 18 Pushdown Automata, Context Free Grammars and Languages -- 19 Turing Machines, Recursively Enumerable Languages and Type 0 Grammars -- 20 Linear Bounded Automata, Context Sensitive Languages and Type 1 Grammars -- 21 Languages Between Context Free and Context Sensitive -- 22 Transformational Grammars -- Solutions to Selected Exercises -- 1 -- 2 -- 3 -- 4 -- Review problems, Part A -- 6 -- 7 -- 8 -- Review problems, Part B -- 9 -- 10 -- 11 -- 12 -- Review problems, Part C -- 13 -- 14 -- 15 -- 17 -- 18 -- 19 -- 20 -- Appendix E-II -- Review problems, Part E.

Elementary set theory accustoms the students to mathematical abstraction, includes the standard constructions of relations, functions, and orderings, and leads to a discussion of the various orders of infinity. The material on logic covers not only the standard statement logic and first-order predicate logic but includes an introduction to formal systems, axiomatization, and model theory. The section on algebra is presented with an emphasis on lattices as well as Boolean and Heyting algebras. Background for recent research in natural language semantics includes sections on lambda-abstraction and generalized quantifiers. Chapters on automata theory and formal languages contain a discussion of languages between context-free and context-sensitive and form the background for much current work in syntactic theory and computational linguistics. The many exercises not only reinforce basic skills but offer an entry to linguistic applications of mathematical concepts. For upper-level undergraduate students and graduate students in theoretical linguistics, computer-science students with interests in computational linguistics, logic programming and artificial intelligence, mathematicians and logicians with interests in linguistics and the semantics of natural language.
