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Edizione	[1st edition]
Descrizione fisica	1 online resource (383 pages) : illustrations, tables
Collana	New York Academy of Sciences
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Disciplina	511.3
Soggetti	Logic
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes bibliographical references (p. [348]-350) and index
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Understanding propositional logic -- Deductive reasoning in propositional logic -- Understanding first-order logic -- Deductive reasoning in first-order logic -- Applications : mathematical proofs and automated reasoning -- Answers and solutions to selected exercises.
Sommario/riassunto	Written in a clear, precise and user-friendly style, Logic as a Tool: A Guide to Formal Logical Reasoning is intended for undergraduates in both mathematics and computer science, and will guide them to learn, understand and master the use of classical logic as a tool for doing correct reasoning. It offers a systematic and precise exposition of classical logic with many examples and exercises, and only the necessary minimum of theory. The book explains the grammar, semantics and use of classical logical languages and teaches the reader how grasp the meaning and translate them to and from natural language. It illustrates with extensive examples the use of the most popular deductive systems -- axiomatic systems, semantic tableaux, natural deduction, and resolution -- for formalising and automating logical reasoning both on propositional and on first-order level, and provides the reader with technical skills needed for practical derivations in them. Systematic guidelines are offered on how to perform logically

correct and well-structured reasoning using these deductive systems and the reasoning techniques that they employ. •Concise and systematic exposition, with semi-formal but rigorous treatment of the minimum necessary theory, amply illustrated with examples •Emphasis both on conceptual understanding and on developing practical skills •Solid and balanced coverage of syntactic, semantic, and deductive aspects of logic •Includes extensive sets of exercises, many of them provided with solutions or answers •Supplemented by a website including detailed slides, additional exercises and solutions

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