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Autore	Makinson David <1941->
Titolo	Sets, Logic and Maths for Computing / / by David Makinson
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ISBN	3-030-42218-6
Edizione	[3rd ed. 2020.]
Descrizione fisica	1 online resource (408 pages)
Collana	Undergraduate Topics in Computer Science, , 2197-1781
Disciplina	004.0151
Soggetti	Computer science - Mathematics Discrete mathematics Machine theory Mathematics - Data processing Logic, Symbolic and mathematical Discrete Mathematics in Computer Science Formal Languages and Automata Theory Computational Science and Engineering Discrete Mathematics Mathematical Logic and Foundations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Part I: Sets -- Collecting Things Together: Sets -- Comparing Things: Relations -- Associating One Item with Another: Functions -- Recycling Outputs as Inputs: Induction and Recursion -- Part II: Math -- Counting Things: Combinatorics -- Weighing the Odds: Probability -- Squirrel Math: Trees -- Part III: Logic -- Yea and Nay: Propositional Logic -- Something about Everything: Quantificational Logic -- Just Supposing: Proof and Consequence -- Sticking to the Point: Relevance in Logic.
Sommario/riassunto	This easy-to-understand textbook introduces the mathematical language and problem-solving tools essential to anyone wishing to enter the world of computer and information sciences. Specifically designed for the student who is intimidated by mathematics, the book offers a concise treatment in an engaging style. The thoroughly revised third edition features a new chapter on relevance-sensitivity in logical

reasoning and many additional explanations on points that students find puzzling, including the rationale for various shorthand ways of speaking and ‘abuses of language’ that are convenient but can give rise to misunderstandings. Solutions are now also provided for all exercises. Topics and features: Presents an intuitive approach, emphasizing how finite mathematics supplies a valuable language for thinking about computation Discusses sets and the mathematical objects built with them, such as relations and functions, as well as recursion and induction Introduces core topics of mathematics, including combinatorics and finite probability, along with the structures known as trees Examines propositional and quantificational logic, how to build complex proofs from simple ones, and how to ensure relevance in logic Addresses questions that students find puzzling but may have difficulty articulating, through entertaining conversations between Alice and the Mad Hatter Provides an extensive set of solved exercises throughout the text This clearly-written textbook offers invaluable guidance to students beginning an undergraduate degree in computer science. The coverage is also suitable for courses on formal methods offered to those studying mathematics, philosophy, linguistics, economics, and political science. Assuming only minimal mathematical background, it is ideal for both the classroom and independent study. Dr. David Makinson has taught courses related to the material of this book at the American University of Beirut, King’s College London and, in recent years, the London School of Economics, UK.