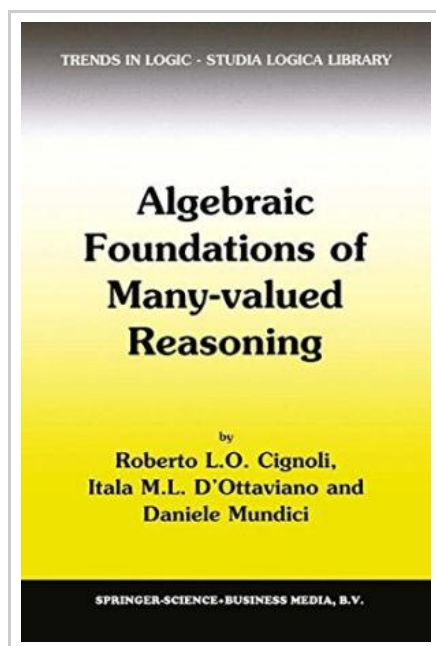




Algebraic Foundations of Many-Valued Reasoning

By Daniele Mundici

Springer. Hardcover. Book Condition: New. Hardcover. 233 pages. Dimensions: 9.6in. x 6.5in. x 0.8in. The aim of this book is to give self-contained proofs of all basic results concerning the infinite-valued propositional calculus of Lukasiewicz and its algebras, Changs MV -algebras. This book is for self-study: with the possible exception of Chapter 9 on advanced topics, the only prerequisite for the reader is some acquaintance with classical propositional logic, and elementary algebra and topology. In this book it is not our aim to give an account of Lukasiewicz's motivations for adding new truth values: readers interested in this topic will find appropriate references in Chapter 10. Also, we shall not explain why Lukasiewicz infinite-valued propositional logic is a basic ingredient of any logical treatment of imprecise notions: Hajek's book in this series on Trends in Logic contains the most authoritative explanations. However, in order to show that MV-algebras stand to infinite-valued logic as boolean algebras stand to two-valued logic, we shall devote Chapter 5 to Ulam's game of Twenty Questions with lies/errors, as a natural context where infinite-valued propositions, connectives and inferences are used. While several other semantics for infinite-valued logic are known in the literature—notably Giles...



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