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Sommario/riassunto

The central contention of this book is that second-order logic has a central role to play in laying the foundations of mathematics. In order to develop the argument fully, the author presents a detailed development of higher-order logic, including a comprehensive discussion of its semantics. Professor Shapiro demonstrates the prevalence of second-order notions in mathematics, and also the extent to which mathematical concepts can be formulated in second-order languages. He shows how first-order languages are insufficient to codify many concepts in contemporary mathematics, and thus that higher-order logic is needed to fully reflect current mathematics. Throughout, the emphasis is on discussing the philosophical and historical issues associated with this subject, and the implications that they have for foundational studies.
