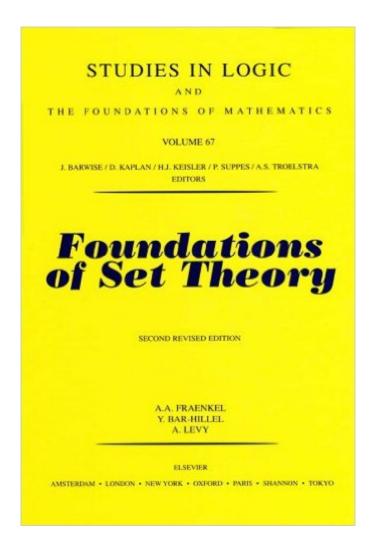
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# Foundations Of Set Theory (Studies In Logic And The Foundations Of Mathematics)





# Synopsis

Foundations of Set Theory discusses the reconstruction undergone by set theory in the hands of Brouwer, Russell, and Zermelo. Only in the axiomatic foundations, however, have there been such extensive, almost revolutionary, developments. This book tries to avoid a detailed discussion of those topics which would have required heavy technical machinery, while describing the major results obtained in their treatment if these results could be stated in relatively non-technical terms. This book comprises five chapters and begins with a discussion of the antinomies that led to the reconstruction of set theory as it was known before. It then moves to the axiomatic foundations of set theory, including a discussion of the basic notions of equality and extensionality and axioms of comprehension and infinity. The next chapters discuss type-theoretical approaches, including the ideal calculus, the theory of types, and Quine's mathematical logic and new foundations; intuitionistic conceptions of mathematics and its constructive character; and metamathematical and semantical approaches, such as the Hilbert program. This book will be of interest to mathematicians, logicians, and statisticians.

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The definitive book on ZF.In an observable universe of particles, which seems to be ever expanding, it is possible that, because of the neverending sequence of states of some of these timed automata, that the natural numbers and finitistic constructible axiomatics built upon the foundation of the natural numbers exists in the meta-universe of the observer consciousness space ... If as Popper hypothesised, if there are interacting realms of reality, the universe of particles may, or may not, have a sort of Turing machine as a particle, or, perhaps, has only particles that have finitistic descriptions. ZF plus constants of a Turing machine type would fit in as a variant sort of Russellian type theory, the standard variant described amongst other set theories in this encyclopedic work. Mathematics exists to describe the universe we live in. Discoveries of physics therefore may enhance the maths we seek to describe the universe with. The utility of this work a systematic survey of every coherent formulation of set theory the authors found from decades of research in the twentieth century is that, based on the research of hundreds of mathematicians, we can be assured that the knowledge that describes the variant set theories is well informed. Of course, Fraenkel is the F from ZF. The best philosophy of mathematics work I have ever read.

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