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Review of
F. R. DRAKE AND D. SINGH, *INTERMEDIATE SET THEORY*

Chichester, England and New York, New York: John Wiley & Sons, 1996
x + 234 pp. ISBN 0-471-96494-8

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This book is intended as a college text intermediate between a minimal undergraduate introduction to set theory and any beginning graduate text in the subject. It is also intended as an introduction to a minimum amount of foundational aspects that every mathematician should know about. The book is a welcome addition to the project of filling in the missing detail of beginning graduate set theory texts, weighing in on the side of definability as opposed to that of combinatorics.

This review will outline the contents of the text, being more detailed in the parts that are "intermediate", and end with some final comments. Even though the first seven chapters are in some sense conventional, the plan of attack should be remarked on: even though the formal theory is introduced first, a more naïve approach to sets is employed before coming back to work in the formalization.

Chapter 1 (Some of the history of the concept of sets) introduces the history of set theory from Cantor's creation to the axiomatizations, discusses some of the paradoxes and subsequent type structures. Chapter 2 (First-order logic and its use in set theory) presents the syntax and semantics of LST (the language of set theory) and the addition of new terms to LST. Chapter 3 (The axioms of set theory) presents the ZF (Zermelo Fraenkel) axioms as well as arguments for them. Chapter 4 (Cardinals) covers countable and uncountable sets as well as the arithmetic of cardinal numbers from a naïve (i.e., non-axiomatic) standpoint. Chapter 5 (Order relations and ordered sets) continues a naïve stance towards orderings, some properties of ordered sets, lattices, Boolean algebras, and well-ordered sets. Many exercises develop the material, including the arithmetic of linear orders, but still from the non-axiomatic standpoint.