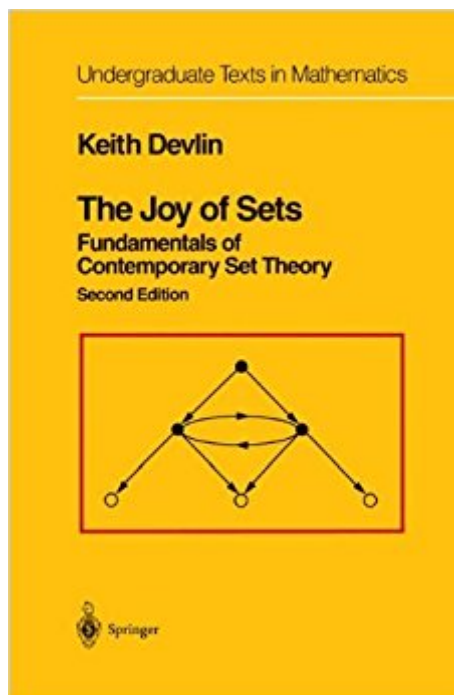


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The Joy Of Sets: Fundamentals Of Contemporary Set Theory (Undergraduate Texts In Mathematics)



Synopsis

This text covers the parts of contemporary set theory relevant to other areas of pure mathematics. After a review of "naïve" set theory, it develops the Zermelo-Fraenkel axioms of the theory before discussing the ordinal and cardinal numbers. It then delves into contemporary set theory, covering such topics as the Borel hierarchy and Lebesgue measure. A final chapter presents an alternative conception of set theory useful in computer science.

Book Information

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Customer Reviews

Keith Devlin is one of those rare research mathematicians who is able to make recent advances in mathematics understandable and interesting to those whose mathematical education is obsolete or incomplete. I'm in the former category, having done my graduate work in pure math 50 years ago; although I've tried to keep up, constraints of time and other obligations have made it difficult. Most modern texts on set theory put the reader to sleep, either because they avoid the important parts ("Set Theory for Those who Don't Want to Know It") or because they employ a degree of formalism that is quite difficult to grasp ("Set Theory Derived by Pure Propositional Logic, Step by Step"). Devlin's book avoids both traps. He presents modern advanced material that illuminates the subject admirably, but is careful not to submerge the reader in overwhelming finicky details. His discussions of constructive set theory, of independence proofs in set theory, and of non-well-founded set theory, are the first ones I've seen that get me excited enough to put the book aside and start exploring

some of the implications on my own. If I search for anything about the book to criticize, I find only one very minor thing. The sequence of proofs that show "Zorn's Lemma", the Axiom of Choice, the well-ordering principle, "Tukey's Lemma", etc to be equivalent to one another as an addition to the traditional Zermelo-Frankel axioms would be clearer if prefaced by an intuitive discussion of why the various steps in the chain of reasoning "ought" to work as they do; such a discussion helped me a lot many years ago to internalize what's going on. But that comment is just a nit.

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