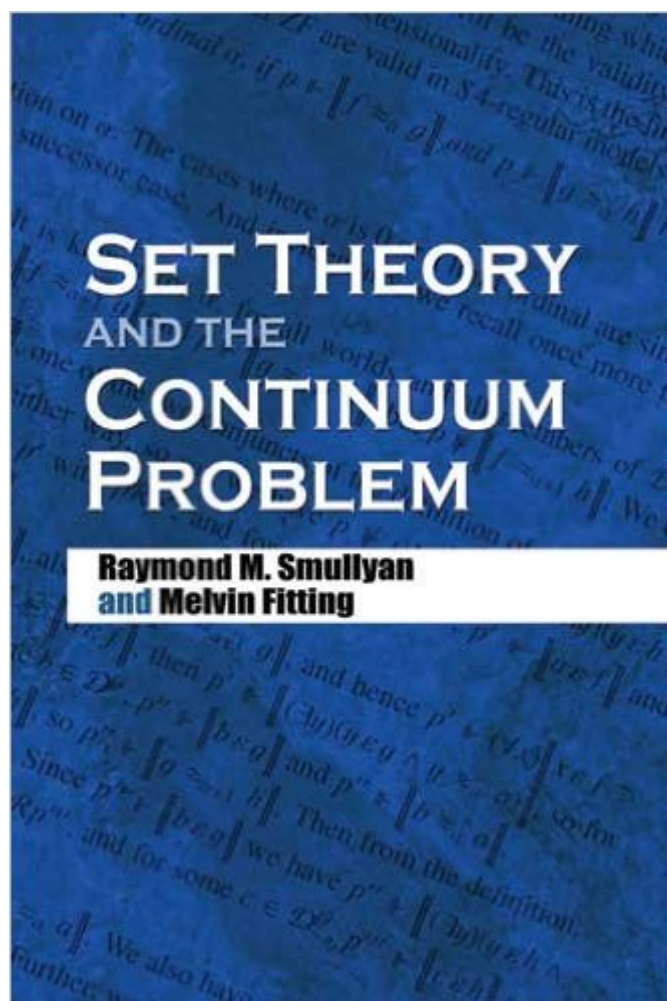# Set Theory And The Continuum Problem (Dover Books On Mathematics)

Synopsis

A lucid, elegant, and complete survey of set theory, this volume is drawn from the authors' substantial teaching experience. The first of three parts focuses on axiomatic set theory. The second part explores the consistency of the continuum hypothesis, and the final section examines forcing and independence results.Part One's focus on axiomatic set theory features nine chapters that examine problems related to size comparisons between infinite sets, basics of class theory, and natural numbers. Additional topics include author Raymond Smullyan's double induction principle, super induction, ordinal numbers, order isomorphism and transfinite recursion, and the axiom of foundation and cardinals. The six chapters of Part Two address Mostowski-Shepherdson mappings, reflection principles, constructible sets and constructibility, and the continuum hypothesis. The text concludes with a seven-chapter exploration of forcing and independence results. This treatment is noteworthy for its clear explanations of highly technical proofs and its discussions of countability, uncountability, and mathematical induction, which are simultaneously charming for experts and understandable to graduate students of mathematics.

Book Information

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Customer Reviews

Some reviewers reported missing symbols. As one of the authors of the book, I was seriously concerned. (Disclaimer: we receive no royalties on this edition.) On checking with the publisher, Dover, I found that the second (not the first) printing was defective and was recalled, though some copies got out anyway. I understand the problem has now been corrected. This does not mean there are no errors in the book, but now they should be entirely those of the authors.

Perhaps there were different printing runs, but as the first reviewer experienced, my copy lacked the symbols for membership, subset, quantifiers, etc. It really does make the book useless. I too would like to have a correctly printed copy.Update. I returned the book, explaining that the symbols were missing and got a replacement yesterday, Sept. 29. Unfortunately the replacement also lacks the symbols. The reviewer who had symbols is in Europe. Perhaps the US printing is messed up. I am going to go to a book store where I can look at the pages before I buy the book.

This is just a heads up for those, like me, who would love to obtain an intact copy. There are still books with missing symbols out there and being sold on : I just received a new 2010 Dover edition from an online seller with a 5-star rating that had most/all of the math symbols missing. Checking the the Dover Publications website, which has a look inside feature, I found the version they display has all the symbols. So I assume that buying a copy directly from Dover would result in obtaining an intact book.Also some vendors certainly have copies with all the symbols (I just bought one from a small vendor who kindly checked the book for me by looking at the first definition on page 15 per my description of what should be there). The larger vendors typically cannot tell because they have no access to the book.Fortunately, my first purchase was fulfilled by so there was no problem returning it.

Smullyan's book is simply thrilling and at a very reasonable price !It actually takes you to Paul Cohen's inspired findings without having to dive into Cohen's unreadable treatment and drown (if you're not a seasoned professional)Forget about Potter's overpriced indigestion and Suppes's monotonous books (see my reviews on those)Buy this book and enjoy it.

Apparently some people had bought a printing of this Dover edition without maths symbols. In my copy of this Dover edition all maths symbols are here. Maybe there are different print runs and the first is without maths symbol. Maybe I have bought (with .fr) a second printing where the problem has been corrected.Turning to the content this book is on independence proofs in set theory.The first part, probably written by Smullyan (his witty style is easily recognized), begins with an exposition of the basics of set theory (with an axiomatics based on the concepts of sets and classes) and then exposes the consistency proofs of GÃƒÂ´del of the axiom of choice and of the generalized continuum hypothesis. It is very readable, if not always as precise as it should be necessary.The second part is the most original. It exposes the method of forcing with the help of a

modicum of modal logic (all the necessary concepts of modal logic are explained), then proceed to prove the Independence of the Axiom of Choice and of the Continuum Hypothesis. The use of modal logic helps very much to understand the forcing method. But I must say that some points at the beginning of the exposition contain errors or are not exposed with all necessary details. And many points are left as exercices (from easy to difficult) to the reader. This is why I give only 3 stars to the book.But overall, it is a very easy and readable introduction to the independence proofs in set theory, only to be compared with Kunen's "Set Theory".

This is a great book for either self-study, or even as a text for a (probably 2-3 semester) course on set theory. It is very useful to have a little bit of background of naive set theory (although the book does go through a terse introduction to this). It is a great introduction to independence proofs and forcing. I highly recommend it.Judging by some of the other reviews, it look like there may have been a printing that omitted some of the mathematical symbols. I ordered mine from several months ago, and it was fine.

I just returned to .it a copy with missing symbols - it even misses two consecutive "f", i.e. "ff" wherever they can possibly occur. I loved the first pages, but going on that way was almost impossible - more a puzzle than a normal reading. So my review is not particularly on the content, but just in order to say that unfortunately wrong copies are still around

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