

# Introduction to Mathematical Logic, Fifth Edition (Discrete Mathematics and Its Applications)

By Elliott Mendelson

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### New to the Fifth Edition

- A new section covering basic ideas and results about nonstandard models of number theory
- A second appendix that introduces modal propositional logic
- An expanded bibliography
- Additional exercises and selected answers

This long-established text continues to expose students to natural proofs and set-theoretic methods. Only requiring some experience in abstract mathematical thinking, it offers enough material for either a one- or two-semester course on mathematical logic.

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#### Review

Since it first appeared in 1964, Mendelson's book has been recognized as an excellent textbook in the field. It is one of the most frequently mentioned texts in references and recommended reading lists ... This book rightfully belongs in the small, elite set of superb books that every computer science graduate, graduate student, scientist, and teacher should be familiar with.

?*Computing Reviews*, May 2010

"For the reviews of the previous editions see Zbl 192.01901, Zbl 498.03001, Zbl 681.03001 and Zbl 915.03002. The following are the significant changes in this edition: A new section (3.7) on the order type of a countable nonstandard model of arithmetic; a second appendix, Appendix B, on basic modal logic, in particular on the normal modal logics K, T, S4, and S5 and the relevant Kripke semantics for each; an expanded bibliography and additions to both the exercises and to the Answers to Selected Exercises, including corrections to the previous version of the latter."

?J. M. Plotkin, *Zentralblatt MATH* 1173

"Since its first edition, this fine book has been a text of choice for a beginner's course on mathematical logic. ... There are many fine books on mathematical logic, but Mendelson's textbook remains a sure choice for a first course for its clear explanations and organization: definitions, examples and results fit together in a harmonic way, making the book a pleasure to read. The book is especially suitable for self-study, with a wealth of exercises to test the reader's understanding."

?*MAA Reviews*, December 2009

### Praise for the Fourth Edition

"In my work as a math teacher, researcher, author, and journal editor, I often encounter problems with a logical component. When that need arises, my first choice of reference is always this book. It is the most concise and readable introductory text I have ever encountered and it is a rare occasion when I fail to find the background material needed to solve the problem. It is also an excellent source of problems and I have pulled the ideas for many test questions from it over the years."

?Charles Ashbacher

#### About the Author

**Elliott Mendelson** is professor emeritus in the Department of Mathematics at Queens College.

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