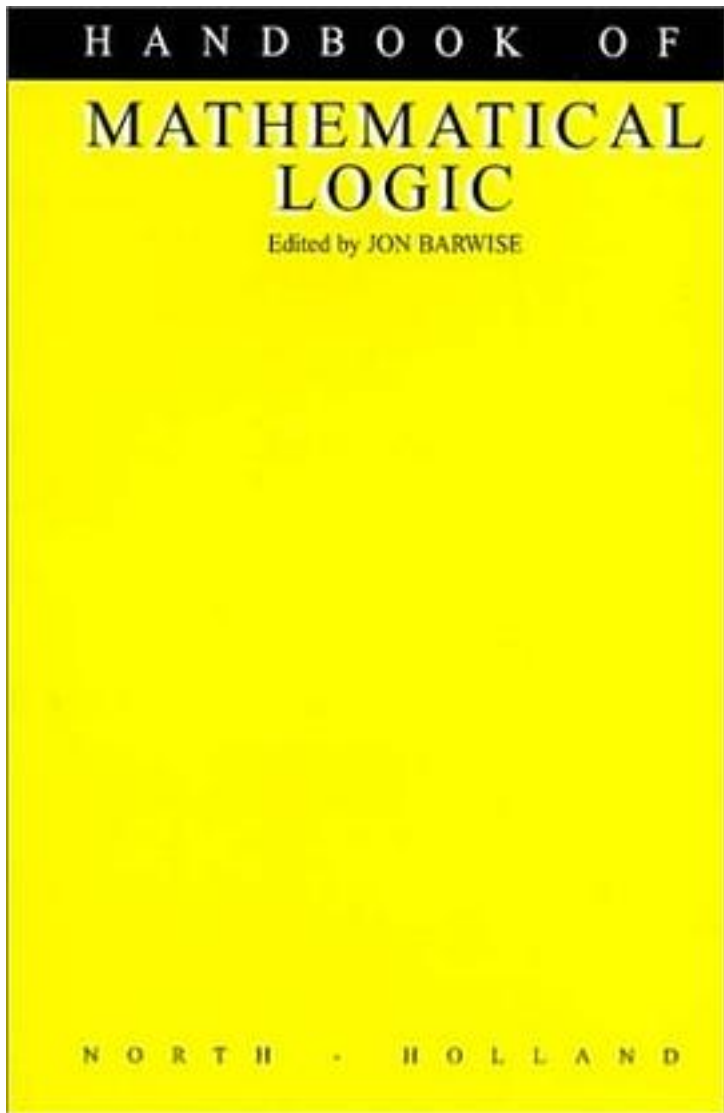


Handbook of Mathematical Logic (Studies in Logic and the Foundations of Mathematics)



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The Handbook of Mathematical Logic is an attempt to share with the entire mathematical community some modern developments in logic. We have selected from the wealth of topics available some of those which deal with the basic concerns of the subject, or are particularly important for applications to other parts of mathematics, or both.

Mathematical logic is traditionally divided into four parts: model theory, set theory, recursion theory and proof theory. We have followed this division, for lack of a better one, in arranging this book. It made the placement of chapters where there is interaction of several parts of logic a difficult matter, so the division should be taken with a grain of salt. Each of the four parts begins with a short guide to the chapters that follow. The first chapter or two in each part are introductory in scope. More advanced chapters follow, as do chapters on applied or applicable parts of mathematical logic. Each chapter is definitely written for someone who is not a specialist in the field in question. On the other hand, each chapter has its own intended audience which varies from chapter to chapter. In particular, there are some chapters which are not written for the general mathematician, but rather are aimed at logicians in one field by logicians in another.

We hope that many mathematicians will pick up this book out of idle curiosity and leaf through it to get a feeling for what is going on in another part of mathematics. It is hard to imagine a mathematician who could spend ten minutes doing this without wanting to pursue a few chapters, and the introductory sections of others, in some detail. It is an opportunity that hasn't existed before and is the reason for the Handbook.

作者介绍:

Jon Barwise

Kenneth Jon Barwise (June 29, 1942 – March 5, 2000) was an American mathematician, philosopher and logician who proposed some fundamental revisions to the way that logic is understood and used.

Born in Independence, Missouri to Kenneth T. and Evelyn, he was a precocious child.

A pupil of Solomon Feferman at Stanford University, Barwise started his research in infinitary logic. After positions as assistant professor at the Universities of Yale and Wisconsin, during which time his interests turned to natural language, he returned to Stanford in 1983 to direct the Center for the Study of Language and Information. He began teaching at Indiana University in 1990. He was elected a Fellow of the American Academy of Arts and Sciences in 1999.[1]

Barwise contended that, by being explicit about the context in which a proposition is made, the situation, many problems in the application of logic can be eliminated. He sought ... to understand meaning and inference within a general theory of information, one that takes us outside the realm of sentences and relations between sentences of any language, natural or formal. In particular, he claimed that such an approach resolved the liar paradox. He made use of Peter Aczel's non-well-founded set theory in understanding "vicious circles" of reasoning.

Barwise, along with his former colleague at Stanford John Etchemendy, was the author of the popular logic textbook *Language, Proof and Logic*. Unlike the Handbook which was a survey of the state of the art of Mathematical Logic c. 1975, this work targeted elementary logic. The text is notable for including computer-aided homework problems, some of which provide visual representations of logical problems. During his time at Stanford, he was also the first Director of the Symbolic Systems Program, an interdepartmental degree program focusing on the relationships between cognition, language, logic, and computation. The K. Jon Barwise Award for Distinguished Contributions to the Symbolic Systems Program has been given periodically since 2001.

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