

Perspectives in Mathematical Logic

In recent years interconnections between different lines of research in mathematical logic and links with other branches of mathematics have proliferated. The subjects is now both rich and varied. This series, organized by the Ω -Group, aims to provide, as it were, maps or guides to this complex terrain as seen from various angles. The group is not committed to any particular philosophical program. Nevertheless, the critical discussion which each planned book undergoes ensures that it will represent a coherent line of thought; and that, by developing certain themes, it will be of greater interest than a mere assemblage of results and techniques.

The books in the series differ in level: some are introductory, some highly specialized. They also differ in scope, some offering a wide view of an area while others present more specialized topics. Each book is, at its own level, reasonably self-contained. Although no book depends on another as prerequisite, authors are encouraged to fit their book in with other planned volumes—sometimes deliberately seeking coverage of the same material from different points of view.



Springer-Verlag
Berlin
Heidelberg
New York

J. Barwise

Admissible Sets and Structures

An Approach to Definability Theory
22 figures, 5 tables. XIV, 394 pages. 1975
ISBN 3-540-07451-1

A. Levy

Basic Set Theory

2 tables. Approx. 350 pages. 1978
ISBN 3-540-08417-7

K. Schütte

Proof Theory

Translation from the German

by J.N. Crossley

XII, 299 pages. 1977

(Grundlehren der mathematischen
Wissenschaften, Band 225)

ISBN 3-540-07911-4

Contents: Pure Logic: Fundamentals. Classical Predicate Calculus. Intuitionistic Predicate Calculus. Classical Simple Type Theory. – Systems of Arithmetic: Ordinal Numbers and Ordinal Terms. Functionals of Finite Type. Pure Number Theory. – Subsystems of Analysis: Predicative Analysis. Higher Ordinals and Systems of Π^1_1 -Analysis.

This book was planned as a new edition of Schütte's *Beweistheorie* (Grundlehren der mathematischen Wissenschaften, Band 103). However, in view of the development of the subject, the book was virtually completely rewritten, and translated into English. Intuitionistic predicate logic and simple type theory are studied as well as classical predicate logic, and proofs of cut elimination are provided. The Gödel interpretation of number theory is presented in full detail. Various sub-systems of analysis (including Π^1_1 -analysis) and predicative systems of Δ^1_1 -analysis and ramified analysis are considered. The delimitations of deducible transfinite induction for all systems are studied. The required theory of ordinal numbers is provided first classically and then constructively. With the basic notions of positive and negative part of a formula, a clear and simple formalization of many parts of proof theory is provided.

Textbooks in Logic

D.W. Barnes, J.M. Mack

An Algebraic Introduction to Mathematical Logic

5 figures. IX, 121 pages. 1975

(Graduate Texts in Mathematics,
Volume 22)

ISBN 3-540-90109-4

H. Hermes

Introduction to Mathematical Logic

Translator: D. Schmidt

Universitext

XI, 242 pages. 1973

ISBN 3-540-05819-2

Y.I. Manin

A Course in Mathematical Logic

Translated from the Russian

by N. Koblitz

Approx. 250 pages. 1977

(Graduate Texts in Mathematics,
Volume 53)

ISBN 3-540-90243-0

J.D. Monk

Mathematical Logic

X, 531 pages. 1976

(Graduate Texts in Mathematics,
Volume 37)

ISBN 3-540-90170-1

Springer-Verlag
Berlin Heidelberg New York

ISBN 3-540-07904-1
ISBN 0-387-07904-1