Tatra Mt. Math. Publ. **25** (2002), 139–140

TATRA MOUNTAINS
*Mathematical Publications*

# BOOK REVIEW

**Krantz, S. G.: HANDBOOK OF LOGIC AND PROOF TECHNIQUES FOR COMPUTER SCIENCE. Birkhäuser, Springer, Boston–New York 2002, 245 p. EUR 60.75, ISBN 0-8176-4220-X.**

Computer science is one of the most active areas of scientific interest using logic. The aim of this book is to stimulate communication between computer science and mathematics and also to be a useful handbook for both fields. It turns out that computer science is becoming ever more mathematical and also that mathematics is becoming increasingly comfortable with the use of computers, and this book should serve as a catalyst in both activities.

The book is intended above all to be a resource for working mathematical scientist oriented to computer science. It provides a quick introduction and a review of the key topics in logic for computer scientist, engineer and mathematician-nonspecialist in logic.

Courses in linear algebra, finite mathematics and some other mathematical structures are adequate preparation for the study of this book. From the computer science side, a knowledge of a programming language, some issues of complexity and decidability is recommended. It is not a textbook, but a handbook containing very few proofs, on the other hand, it contains definitions, examples and discussion of all key ideas in basic logic. It also includes self-contained introductions to critical advanced topics, including Gödel's completeness and incompleteness theorems, methods of proofs, cardinal and ordinal numbers, the continuum hypothesis, the axiom of choice, model theory, number systems and their construction, multi-valued logics, category theory, universal algebra, proof theory, fuzzy set theory, recursive functions, NP-completeness, decision problems, Boolean algebra, semantics, decision problems, and the word problem. There is also a thorough index, a glossary, a lexicon of notation, a guide to the literature, and an extensive bibliography.

The book is recommended as a useful reference for working scientists-mathematicians, computer scientists, engineer or system scientists and for students, all who want to have a quick sketch of a key ideas of logic and related issues.

Taking all together it may be said that this book was written with computer scientists in mind.

Miloslav Duchoň, Bratislava