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Zbl 1235.03001
Mundici, Daniele
Logic. A brief course. (English)
 Unitext 60. La Matematica per il 3+2. Berlin: Springer (ISBN 978-88-470-2360-4/pbk; 978-88-470-2361-1/ebook). xi, 124 p. EUR 29.95/net; SFR 40.00; £ 26.99; \$ 49.95 (2012).



Two basic facts of the first part of the book are Robinson's completeness theorem and Gödel's compactness theorem for classical propositional logic. The resolution method, with the Davis-Putnam procedure in the centre, is used as an essential tool in introducing classical logic. Throughout the text, the author develops many fundamental logical concepts including Tarski semantics, Herbrand models, Skolem normal forms, refutations, proofs, and some nonstandard models. It concludes with Gödel's completeness theorem.

The presented material is divided into sixteen chapters, each closing with exercises, ideally placed for a one semester course.

The book contains all the necessary means to understand any advanced text in logic, including the subjects covering Gödel's incompleteness theorems. Although brief, this course seems to be an excellent introduction to modern mathematical logic, and, as such, we recommend it firstly to students of mathematics and computer science, and also to students of philosophy and linguistics, having in mind that the mathematical prerequisites are minimal. The author's beautiful, clear and approachable style makes this book also recommendable to a broader range of readers who are interested in modern trends in logic.

Reviewer: Branislav Boričić (Beograd)

MSC 2010
 03-01 Textbooks (mathematical logic)
 03B05 Classical propositional logic
 03B10 First-order logic
 03F40 Gödel numberings and issues of incompleteness

Keywords
 syntax; semantics; resolution; proof; refutation; compactness; normal form; propositional logic; predicate logic; completeness; equality; model

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Logic: a Brief Course

Mundici, D.

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