

## Selected Titles

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### SCIENCE & TECHNOLOGY / Mathematics

Loveland, Donald W. **Three views of logic: mathematics, philosophy, and computer science**, by Donald W. Loveland, Richard E. Hodel, and S. G. Sterrett. Princeton, 2014. 322p bibl index afp ISBN 9780691160443 pbk, \$49.50 (reviewed in CHOICE September 2014).

Loveland (emer., computer science, Duke), Hodel (emer., mathematics, computer science, Duke), and Sterrett (history and philosophy of science, Wichita State) present an interdisciplinary approach to logic in this upper-level undergraduate text. The three-part book is based on a course that has been taught at Duke University for many years. The authors give careful presentations of classical propositional calculus and first-order logic, with many examples, in part 1. The focus is on proof theory and automated deduction. This section also introduces the programming language, Prolog, and resolution methods. Part 2, "Computability Theory," presents several classical decision problems, covers computable functions, and includes extensive coverage of machine computability. Part 3, "Philosophical Logic," points out the weaknesses of traditional logic and presents an alternative, relevance logic (a four-valued logic). Overall, this is a well-written text with challenging exercises, proofs of important theorems, and a modern integrated approach. **Summing Up:** Recommended. Upper-division undergraduates.

--R. L. Pour, *emeritus, Emory and Henry College*

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