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Autor:

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Sinopsis

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New to the second edition:

- A useful appendix of formal definitions that can be used as a quick reference
- Second edition includes new exercises, problems, and student projects
- An electronic solutions manual for instructors and individual users

Reading, Writing, and Proving is designed to guide mathematics students during their transition from algorithm-based courses such as calculus, to theorem and proof-based courses. This text not only introduces the various proof techniques and other foundational principles of higher mathematics in great detail, but also assists and inspires students to develop the necessary abilities to read, write, and prove using mathematical definitions, examples, and theorems that are required for success in navigating advanced mathematics courses.

In addition to an introduction to mathematical logic, set theory, and the various methods of proof, this textbook prepares students for future courses by providing a strong foundation in the fields of number theory, abstract algebra, and analysis. Also included are a wide variety of examples and exercises as well as a rich selection of unique projects that provide students with an opportunity to investigate a topic independently or as part of a collaborative effort.

New features of the Second Edition include the addition of formal statements of definitions at the end of each chapter; a new chapter featuring the Cantor?Schröder?Bernstein theorem with a spotlight on the continuum hypothesis; over 200 new problems; two new student projects; and more. An electronic solutions manual to selected problems is available online.

From the reviews of the First Edition:

?The book?emphasizes Pòlya?s four-part framework for problem solving (from his book How to Solve It)?[it] contains more than enough material for a one-semester course, and is designed to give the instructor wide leeway in choosing topics to emphasize?This book has a rich selection of

problems for the student to ponder, in addition to "exercises" that come with hints or complete solutions?I was charmed by this book and found it quite enticing.?

? Marcia G. Fung for MAA Reviews

?? A book worthy of serious consideration for courses whose goal is to prepare students for upper-division mathematics courses. Summing Up: Highly recommended.?

? J. R. Burke, Gonzaga University for CHOICE Reviews

Content Level » Lower undergraduate

Keywords » Higher Mathematics - Introduction to Proof - Mathematical Induction - Mathematical Logic - Mathematics Major - Polya's Method - Problem Solving - Set Theory - Undergraduate Mathematics - Writing Proofs

Related subjects » Analysis - Mathematics - Number Theory and Discrete Mathematics