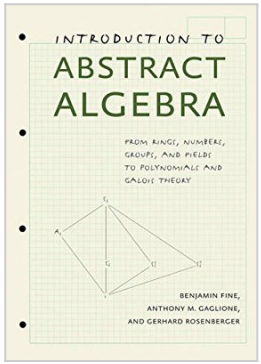

Introduction to Abstract Algebra: From Rings, Numbers, Groups, and Fields to Polynomials and Galois Theory

By Benjamin Fine, Anthony M. Gaglione, Gerhard Rosenberger

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Introduction to Abstract Algebra presents a breakthrough approach to teaching one of math's most intimidating concepts. Avoiding the pitfalls common in the standard textbooks, Benjamin Fine, Anthony M. Gaglione, and Gerhard Rosenberger set a pace that allows beginner-level students to follow the progression from familiar topics such as rings, numbers, and groups to more difficult concepts.

Classroom tested and revised until students achieved consistent, positive results, this textbook is designed to keep students focused as they learn complex topics. Fine, Gaglione, and Rosenberger's clear explanations prevent students from getting lost as they move deeper and deeper into areas such as abelian groups, fields, and Galois theory.

This textbook will help bring about the day when abstract algebra no longer creates intense anxiety but instead challenges students to fully grasp the meaning and power of the approach.

Topics covered include:• Rings• Integral domains• The fundamental theorem of arithmetic• Fields• Groups• Lagrange's theorem• Isomorphism theorems for groups• Fundamental theorem of finite abelian groups• The simplicity of A_n for $n \geq 5$• Sylow theorems• The Jordan-Hölder theorem• Ring isomorphism theorems• Euclidean domains• Principal ideal domains• The fundamental theorem of algebra• Vector spaces• Algebras• Field extensions: algebraic and transcendental• The fundamental theorem of Galois theory• The insolvability of the quintic

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Editorial Review

Review

A friendly introduction to the subject?no sentence is terse, and in fact useful additional statements are sprinkled throughout an argument... Suitably chosen examples are given throughout the text to illustrate the definitions, proofs and arguments, and there are also plenty of exercises at the end of each chapter for the reinforcement of understanding. It is an excellent text for a university course.

(Peter Shiu *Mathematical Gazette*)

The utmost detailed presentation of the core material, the wealth of illustrating examples, and the many outlooks for further study make this excellent algebra primer a highly welcome, useful and valuable addition to the abundant textbook literature in the field.

(*Zentralblatt Math*)

About the Author

Benjamin Fine is a professor of mathematics at Fairfield University. **Anthony M. Gaglione** is a professor of mathematics at the United States Naval Academy. **Gerhard Rosenberger** is a professor of mathematics at the University of Hamburg.

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