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Abstract algebra. An interactive approach.

Textbooks in Mathematics. Boca Raton, FL: CRC Press (ISBN 978-1-4200-9452-7/hbk). xxix, 525 p. with CD-ROM. (2010).

The textbook gives an introduction to algebra. The course includes the explanation on how using the computeralgebra systems GAP and Mathematica, i.e. every chapter includes several interactive problems that students have to use to explore groups and rings. The book contains 8 chapters of group theory including the Sylow's Theorems and solvable groups, 4 chapters of ring theory including Euclidean Domains, unique factorization domains. The last three chapters contain field theory including the fundamental theorem of Galois theory. Each chapter ends with a list of problems (interactive and non-interactive). At the end of the book are answers to the odd-numbered problems. The book can be used for an undergraduate level course (chapter 1-4 and 9-12) or a second semester graduate level course. *Gerhard Pfister (Kaiserslautern)*

Classification: H45 R25
Keywords: algebra; computer algebra; GAP; Mathematica; group theory; ring theory; Galois theory; Sylow's Theorems; textbooks