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Elementary number theory.

Textbooks in Mathematics. Boca Raton, FL: CRC Press (ISBN 978-1-4987-0268-3/hbk). xvi, 393 p. (2015).

This is a nice introduction to elementary number theory, designed for use in a basic undergraduate course. It can be used also for advanced high school students taking an accessible approach for an independent study. The book underlines the role of number theory in pure mathematics and its applications to cryptography and other areas. The first chapter, entitled Divisibility, includes a section on how to do proofs and a brief discussion of lemmas, propositions, theorems, and corollaries. The other chapters are: 2. Linear Diophantine equations, 3. Unique factorization, 4. Applications of unique factorization, 5. Congruences, 6. Fermat, Euler, Wilson, 7. Cryptographic applications, 8. Order and primitive roots, 9. More cryptographic applications, 10. Quadratic reciprocity, 11. Primality and factorization, 12. Sums of squares, 13. Arithmetic functions, 14. Continued fractions, 15. Recent developments. The book offers many pedagogical features. The “check your understanding” problems scattered throughout the chapters assess whether students have learned certain essential information. At the end of every chapter, exercises reinforce an understanding of the material. Other exercises introduce new and interesting ideas while computer exercises reflect the kinds of explorations that number theorists often carry out in their research. Appendix A includes supplementary topics, while Appendix B contains answers and hints of odd-numbered exercises. *László Tóth (Pécs)*

Classification: F65

Keywords: linear Diophantine equations; unique factorization; Congruences; Fermat; Euler; Wilson; cryptography; primitive roots; quadratic reciprocity; sums of squares; arithmetic functions; continued fractions