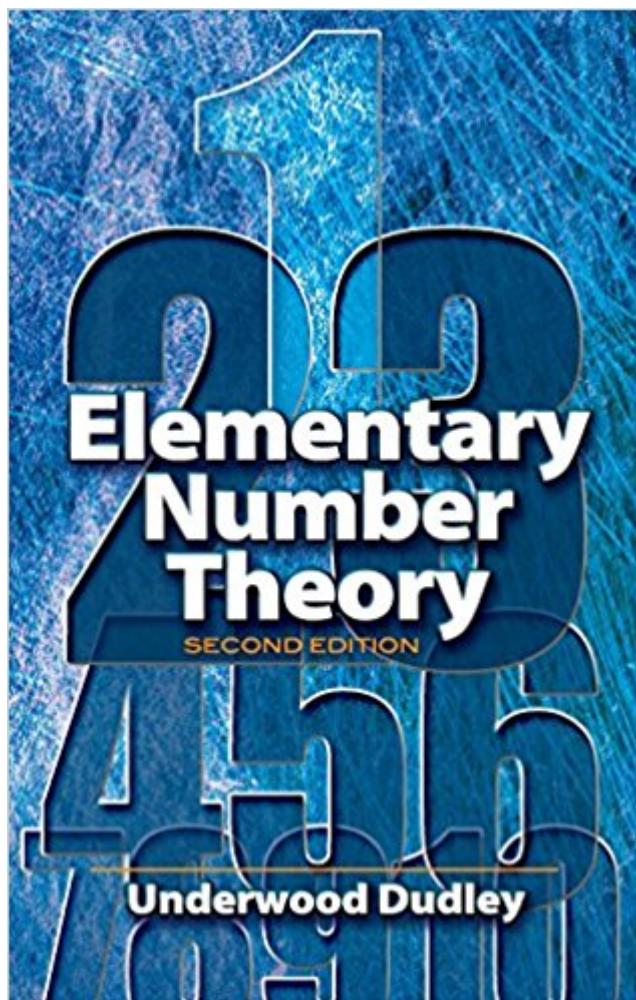


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Elementary Number Theory: Second Edition (Dover Books On Mathematics)



Synopsis

Ideal for a first course in number theory, this lively, engaging text requires only a familiarity with elementary algebra and the properties of real numbers. Author Underwood Dudley, who has written a series of popular mathematics books, maintains that the best way to learn mathematics is by solving problems. In keeping with this philosophy, the text includes nearly 1,000 exercises and problems—some computational and some classical, many original, and some with complete solutions. The opening chapters offer sound explanations of the basics of elementary number theory and develop the fundamental properties of integers and congruences. Subsequent chapters present proofs of Fermat's and Wilson's theorems, introduce number theoretic functions, and explore the quadratic reciprocity theorem. Three independent sections follow, with examinations of the representation of numbers, diophantine equations, and primes. The text concludes with 260 additional problems, three helpful appendixes, and answers to selected exercises and problems.

Book Information

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Customer Reviews

Underwood Dudley is Professor Emeritus of Mathematics at DePauw University. Underwood Dudley: Cranking Out Classics Any editor involved with publishing in mathematics for any length of time is familiar with the phenomena—the receipt, usually via snail mail, of generally handwritten, and generally interminable, really, really interminable, theses on some bizarre and unprovable point—theses hoping, trying against all hope, demanding in fact, to prove the unprovable, to rewrite some fundamental part of mathematics, often in my experience to demonstrate for one final

time that, for example, Einstein didn't know what he was talking about — in short, the work of a mathematical crank! Underwood Dudley (Woody to everyone in the math world), Professor Emeritus, DePauw University, provided an inestimable service to all math editors in the universe by demonstrating that they are not alone in their experience. His unique and wonderful book *Mathematical Cranks* (The Mathematics Association of America, 1992) is a readable feast, especially for those who have been on the receiving end of mathematical crank mail. We're all in Woody's debt for having assembled this collection of failed squared circles, angle trisections, and much, much more. However, chronicling the cranks — as enjoyable as it may have been to the rest of us — is hardly a career, Woody has written many other books as well. And any reader who wants to check out a totally uncranky, reader- and student-friendly, time-tested basic text in *Elementary Number Theory* could hardly do better than to look at the Dover edition of Woody's book by that name, which started its career with Freeman in 1969 and which Dover was pleased to reprint in 2008.

Simply excellent. For someone such as myself who is mathematically-inclined but never had exposure to a number theory course, this book offers a perfect balance of accessibility and depth. The organization of the material has clearly been carefully thought-out so as to inflict minimal pain on newcomers like me. The practice problems are numerous, varied, interesting, and span a fairly broad range of difficulty, meaning you can push yourself to *really* absorb the material if you like. Perhaps, above all else, what this book offers -- or at least what I have found myself experiencing as each chapter unfolds -- is a glimpse at the beauty of number theory. The book has turned something that I once thought to be an abstract, toy-problem-ish area of mathematics into a genuine joy as I come to understand more and more this strange, oft-baffling, occasionally outright-magical branch of math. It is, dare I say, quite a fun read :)

If you have a math background this book is to elementary to get you started. It also has too many display and typo problems to be followed in detail unless you like finding typos. Dover is very uneven in the quality of their digital math books. Some are fine some are not. I got the book because it was recommended as a starting point on number theory in another review but found too elementary. As a calibration, I spent 20 years doing statistical pattern recognition and still know that math.

Spend a fruitful afternoon perusing this slim text and most assuredly the reader's outlook on elementary number theory will be enhanced. The book can be tackled in a brief sojourn, with many

exercises reinforcing the reader's confidence and building mathematical acuity. An acquaintance with Algebra is presumed, but all else is clearly enunciated within the confines of the exposition. The clarity of writing and breadth of topics treated (at a truly introductory level) provides the student of Number Theory a wonderful opportunity to learn something of this most demanding of mathematical disciplines. As the author remarks, Number Theory arms the student with a mathematical style of thinking: "Problem, Deduction, Solution." A worthwhile addition to the literature of elementary expositions on the subject and time well spent.

It is brief and not concise, if you really want to learn about Number Theory you may want to try a bigger book. I am currently preparing for the CSET exam for math and I really don't find it to be too helpful. I had to go use books at my old school library for reference.

This book was amazing! It was informative, clever, and even had some humor and wit! This was a required textbook for my Number Theory class however I enjoyed it so much I also bought it for my dad who also loves math. Highly recommended from me to fellow math lovers like you.

A very clear and smart introduction to number theory. I have a BA in Theoretical Mathematics and this book is perfect for understanding much of the foundations of Mathematics without requiring higher math. It has many great exercises and the second edition corrects mistakes made in the first. Perfect!

I got this book for the class Theory of Numbers. It has all of the theorems and lemmas needed to theoretically learn all of the subject matter, and all of the problems are very good practice. But to get a really good grasp of the material and its practical applications this book needs to be supplemented in some way (lectures, another book, examples from the internet, etc.).

I picked up this book after taking a course in set theory/math logic. It was my first experience with proof based math and I found it very challenging and rewarding. I decided over the summer I would teach myself number theory as well. So far I am about 3 or 4 weeks into the summer and I've chopped down sections 1-6. Keep in mind I am also doing undergrad physics research and a directed study astrophysics course as well, you could easily progress further. I really have enjoyed this book thus far. I often get so caught up in it that I am up until morning toying with problems. The author did a fantastic job of finding the fine line between too difficult and elementary. It seems just

short of a graduate text but a little above a common undergraduate text. Thanks to this text I am becoming much more confident in my ability to set up and execute proofs. I don't want to spoil the methods- but it seems MOSTLY up until this point all proofs are found in the same manner. I have not been able to execute a variety of proof methods (e.g. deduction, mathematical induction, contrapositive, and contradiction.) I would have liked to be able to switch it up some. However, I am no expert and this may be my own doing. If that is the best "CON" I can come up with for this book, that says a lot. I HIGHLY recommend ANY student who enjoys thinking to pick up this book and complete it in its entirety. I feel deprived that I wasn't given this opportunity sooner. I am a 3rd year math+physics major. This book changed me from physics and chemistry to math and physics student and possibly from a physics grad student to a math grad.

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