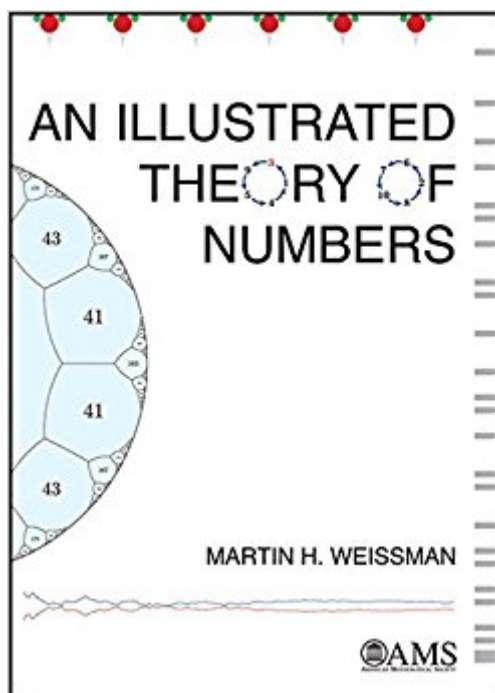


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An Illustrated Theory Of Numbers



Synopsis

An Illustrated Theory of Numbers gives a comprehensive introduction to number theory, with complete proofs, worked examples, and exercises. Its exposition reflects the most recent scholarship in mathematics and its history. Almost 500 sharp illustrations accompany elegant proofs, from prime decomposition through quadratic reciprocity. Geometric and dynamical arguments provide new insights, and allow for a rigorous approach with less algebraic manipulation. The final chapters contain an extended treatment of binary quadratic forms, using Conway's topograph to solve quadratic Diophantine equations (e.g. Pell's equation) and to study reduction and the finiteness of class numbers. Data visualizations introduce the reader to open questions and cutting-edge results in analytic number theory such as the Riemann hypothesis, boundedness of prime gaps, and the class number 1 problem. Accompanying each chapter, historical notes curate primary sources and secondary scholarship to trace the development of number theory within and outside the Western tradition. Requiring only high school algebra and geometry, this text is recommended for a first course in elementary number theory, and to all mathematicians seeking a fresh perspective on an ancient subject.

Book Information

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Customer Reviews

This is a meticulously written and stunningly laid-out book influenced not only by the classical masters of number theory like Fermat, Euler, and Gauss, but also by the work of Edward Tufte on data visualization. Assuming little beyond basic high school mathematics, the author covers a tremendous amount of territory, including topics like Ford circles, Conway's topographs, and

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