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Descrizione fisica	1 online resource (151 p.)
Collana	AMS/MAA Textbooks, , 2577-1213 ; ; v. 9 MAA textbooks
Altri autori (Persone)	OdellE (Edward) StarbirdMichael
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Soggetti	Number theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Divide and conquer -- Prime time -- A modular world -- Fermat's Little Theorem and Euler's Theorem -- Public key cryptography -- Polynomial congruences and primitive roots -- The golden rule : quadratic reciprocity -- Pythagorean triples, sums of squares, and Fermat's Last Theorem -- Rationals close to irrationals and the Pell equation -- The search for primes -- Mathematical induction : the domino effect.
Sommario/riassunto	Number Theory Through Inquiry is an innovative textbook that leads students on a carefully guided discovery of introductory number theory. The book has two equally significant goals. One goal is to help students develop mathematical thinking skills, particularly, theorem-proving skills. The other goal is to help students understand some of the wonderfully rich ideas in the mathematical study of numbers. This book is appropriate for a proof transitions course, for an independent study experience, or for a course designed as an introduction to abstract mathematics. Math or related majors, future teachers, and students or adults interested in exploring mathematical ideas on their own will enjoy Number Theory Through Inquiry.Number theory is the perfect topic for an introduction-to-proofs course. Every college student is familiar with basic properties of numbers, and yet the exploration of those familiar numbers leads us to a rich landscape of ideas. Number Theory Through Inquiry contains a carefully arranged

sequence of challenges that lead students to discover ideas about numbers and to discover methods of proof on their own. It is designed to be used with an instructional technique variously called guided discovery or Modified Moore Method or Inquiry Based Learning (IBL). Instructors' materials explain the instructional method. This style of instruction gives students a totally different experience compared to a standard lecture course. Here is the effect of this experience: Students learn to think independently: they learn to depend on their own reasoning to determine right from wrong; and they develop the central, important ideas of introductory number theory on their own. From that experience, they learn that they can personally create important ideas, and they develop an attitude of personal reliance and a sense that they can think effectively

about difficult problems. These goals are fundamental to the educational enterprise within and beyond mathematics.