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	Titolo	An elementary transition to abstract mathematics / / Gove Effinger and Gary L. Mullen
	Pubbl/distr/stampa	Boca Raton : , : CRC Press, Taylor & Francis Group, , 2020
	ISBN	1-000-70227-8
		1-000-70181-6
		0-429-32481-2
	Edizione	[1st ed.]
	Descrizione fisica	1 online resource (x, 282 pages) : illustrations
	Collana	Textbooks in mathematics
	Disciplina	512/.2
	Soggetti	Mathematics
		Group theory
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	A look back: precalculus math -- A look back: calculus -- About proofs and proof strategies -- Mathematical induction -- The well-ordering principle -- Sets -- Equivalence relations -- Functions -- Cardinality of sets -- Permutations -- Complex numbers -- Matrices and sets with algebraic structure -- Divisibility in Z and number theory -- Primes and unique factorization -- Congruences and the finite sets Zn -- Solving congruences -- Fermat's theorem -- Diffie-Hellman key exchange -- Euler's formula and Euler's theorem -- RSA cryptographic system -- Groups: definition and examples -- Groups: basic properties -- Groups: subgroups -- Groups: cosets -- Groups: Lagrange's theorem -- Rings -- Subrings and ideals -- Integral domains -- Fields -- Vector spaces -- Vector space properties -- Subspaces of vector spaces -- Polynomials -- Polynomials: unique factorization -- Polynomials over the rational, real and complex numbers
	Sommario/riassunto	An Elementary Transition to Abstract Mathematics will help students move from introductory courses to those where rigor and proof play a much greater role. The text is organized into five basic parts: the first looks back on selected topics from pre-calculus and calculus, treating them more rigorously, and it covers various proof techniques; the second part covers induction, sets, functions, cardinality, complex

numbers, permutations, and matrices; the third part introduces basic number theory including applications to cryptography; the fourth part introduces key objects from abstract algebra; and the final part focuses on polynomials. Features: The material is presented in many short chapters, so that one concept at a time can be absorbed by the student. Two "looking back" chapters at the outset (pre-calculus and calculus) are designed to start the student's transition by working with familiar concepts. Many examples of every concept are given to make the material as concrete as possible and to emphasize the importance of searching for patterns. A conversational writing style is employed throughout in an effort to encourage active learning on the part of the student.