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	Titolo	Handbook of Mathematical Induction : Theory and Applications
	Pubbl/distr/stampa	Boca Raton, FL : , : CRC Press, , 2014
	ISBN	0-429-14793-7
		1-4200-9365-7
	Edizione	[First edition.]
	Descrizione fisica	1 online resource (xxv, 893 pages) : illustrations
	Collana	Discrete mathematics and its applications
	Disciplina	511.3/6
	Soggetti	Proof theory
		Induction (Mathematics)
		Logic, Symbolic and mathematical
		Probabilities
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and indexes.
	Nota di contenuto	What is mathematical induction? -- Foundations -- Variants of finite mathematical induction -- Inductive techniques applied to the infinite -- Paradoxes and sophisms from induction -- Empirical induction -- How to prove by induction -- The written MI proof -- Identities -- Inequalities -- Number theory -- Sequences -- Sets -- Logic and language -- Graphs -- Recursion and algorithms -- Games and recreations -- Relations and functions -- Linear and abstract algebra -- Geometry -- Ramsey theory -- Probability and statistics.
	Sommario/riassunto	"Handbook of Mathematical Induction: Theory and Applications shows how to find and write proofs via mathematical induction. This comprehensive book covers the theory, the structure of the written proof, all standard exercises, and hundreds of application examples from nearly every area of mathematics.In the first part of the book, the author discusses different inductive techniques, including well-ordered sets, basic mathematical induction, strong induction, double induction, infinite descent, downward induction, and several variants. He then introduces ordinals and cardinals, transfinite induction, the axiom of choice, Zorns lemma, empirical induction, and fallacies and induction. He also explains how to write inductive proofs.The next part contains more than 750 exercises that highlight the levels of difficulty of an

inductive proof, the variety of inductive techniques available, and the scope of results provable by mathematical induction. Each self-contained chapter in this section includes the necessary definitions, theory, and notation and covers a range of theorems and problems, from fundamental to very specialized. The final part presents either solutions or hints to the exercises. Slightly longer than what is found in most texts, these solutions provide complete details for every step of the problem-solving process."--Provided by publisher.