1. Record Nr. UNINA9910299774303321

Autore	Lombardi Henri
Titolo	Commutative algebra: constructive methods : finite projective modules / / by Henri Lombardi, Claude Quitté
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2015
ISBN	94-017-9944-X
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (1033 p.)
Collana	Algebra and Applications, , 1572-5553 ; ; 20
Disciplina	512.24
Soggetti	Commutative algebra Commutative rings Algebra Field theory (Physics) Matrix theory Computer science—Mathematics Commutative Rings and Algebras Field Theory and Polynomials Linear and Multilinear Algebras, Matrix Theory Symbolic and Algebraic Manipulation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Examples -- The basic local-global principle and systems of linear equations -- The method of undetermined coefficients -- Finitely presented modules -- Finitely generated projective modules.-Examples -- The basic local-global principle and systems of linear equations -- The method of undetermined coefficients -- Finitely presented modules -- Finitely generated projective modules, 1 -- Strictly finite algebras and Galois algebras -- The dynamic method -- Flat modules -- Local rings, or just about -- Finitely generated projective modules, 2 -- Distributive lattices, lattice-groups -- Prüfer and Dedekind rings -- Krull dimension -- The number of generators of a module -- The local-global principle -- Extended projective modules -- Suslin's stability theorem -- Annex -- Constructive logic.
Sommario/riassunto	Translated from the popular French edition, this book offers a detailed

introduction to various basic concepts, methods, principles, and results of commutative algebra. It takes a constructive viewpoint in commutative algebra and studies algorithmic approaches alongside several abstract classical theories. Indeed, it revisits these traditional topics with a new and simplifying manner, making the subject both accessible and innovative. The algorithmic aspects of such naturally abstract topics as Galois theory, Dedekind rings, Prüfer rings, finitely generated projective modules, dimension theory of commutative rings, and others in the current treatise, are all analysed in the spirit of the great developers of constructive algebra in the nineteenth century. This updated and revised edition contains over 350 well-arranged exercises, together with their helpful hints for solution. A basic knowledge of linear algebra, group theory, elementary number theory as well as the fundamentals of ring and module theory is required. Commutative Algebra: Constructive Methods will be useful for graduate students, and also researchers, instructors, and theoretical computer scientists.