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Nota di contenuto	Vector spaces and linear transformations -- Coordinates -- Determinants -- The structure of a linear transformation I -- The structure of a linear transformation II -- Bilinear, sesquilinear, and quadratic forms -- Real and complex inner product spaces -- Matrix groups as Lie groups -- Polynomials -- Modules over principal ideal domains.
Sommario/riassunto	Linear algebra occupies a central place in modern mathematics. This book provides a rigorous and thorough development of linear algebra at an advanced level, and is directed at graduate students and professional mathematicians. It approaches linear algebra from an algebraic point of view, but its selection of topics is governed not only for their importance in linear algebra itself, but also for their applications throughout mathematics. Students in algebra, analysis, and topology will find much of interest and use to them, and the careful treatment and breadth of subject matter will make this book a valuable reference for mathematicians throughout their professional lives. Topics treated in this book include: vector spaces and linear transformations; dimension counting and applications; representation of linear transformations by matrices; duality; determinants and their uses; rational and especially Jordan canonical form; bilinear forms; inner product spaces; normal linear transformations and the spectral theorem; and an introduction to matrix groups as Lie groups. The

book treats vector spaces in full generality, though it concentrates on the finite dimensional case. Also, it treats vector spaces over arbitrary fields, specializing to algebraically closed fields or to the fields of real and complex numbers as necessary.