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Linear algebra. Concepts and methods.

Cambridge: Cambridge University Press (ISBN 978-0-521-27948-2/pbk; 978-0-511-84424-9/ebook). xiv, 516 p. (2012).

This textbook of linear algebra is destined for students of many different types, in particular, for students in economics and political science. It covers all the material that would be expected to be in most first-year university courses together with some more advanced material that would be normally taught later. The authors have rich experience in teaching linear algebra for first- and second-year students, non-specialists in mathematics. However, they state that their aim is not only to study linear algebra, but to understand it. Due to the reviewer's opinion, they have achieved this aim. The book is written with clear and simple language, accessible for beginners, its contents is well balanced. It is a reader-friendly, fairly interactive and helpful text. Each chapter contains activities (tests) – some control questions, “dispersed” in the body of the chapter, allowing the reader to check the validity of his understanding of the material under consideration. In the end of each chapter, there are comments on activities. Further there are presented exercises (in the end of the book their detailed solutions are given). At last, each chapter is completed by problems; here additional and more complicated tasks are gathered; their solutions are omitted. Here is the contents of the book: Preface, Preliminaries: before we begin, 1: Matrices and vectors, 2: Systems of linear equation, 3: Matrix inversion and determinants; 4: Rank, range and linear equations; 5: Vector spaces; 6: Linear independence, bases and dimension; 7: Linear transformations and change of basis; 8: Diagonalisation; 9: Applications of diagonalisation; 10: Inner products and orthogonality; 11: Orthogonal diagonalisation and its applications; 12: Direct sums and projections; 13: Complex matrices and vector spaces; Comments on exercises; Index. Undoubtedly, this is a fine textbook for the beginners including students in economics, management, finance and social sciences including the ones studying at distance. *Peter Zabreiko (Minsk)*

Classification: H65 U25

Keywords: matrices; systems of linear equations; diagonalisation; inner products; textbook; vector; matrix inversion; determinant; rank; range; vector space; linear independence; bases; dimension; linear transformation; orthogonality; orthogonal
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