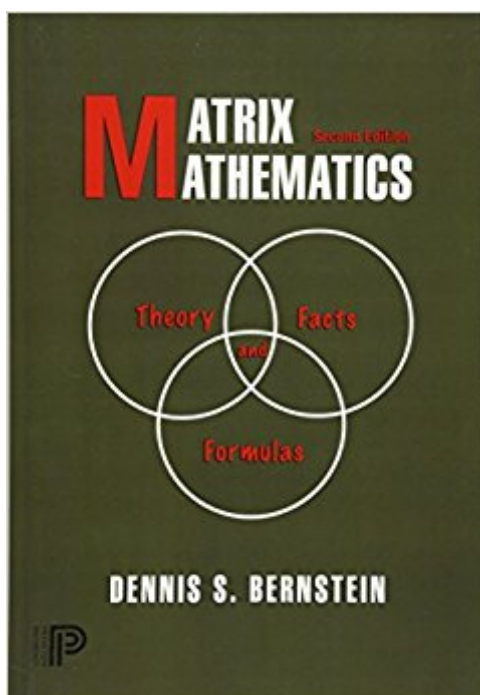


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Matrix Mathematics: Theory, Facts, And Formulas, Second Edition



Synopsis

When first published in 2005, *Matrix Mathematics* quickly became the essential reference book for users of matrices in all branches of engineering, science, and applied mathematics. In this fully updated and expanded edition, the author brings together the latest results on matrix theory to make this the most complete, current, and easy-to-use book on matrices. Each chapter describes relevant background theory followed by specialized results. Hundreds of identities, inequalities, and matrix facts are stated clearly and rigorously with cross references, citations to the literature, and illuminating remarks. Beginning with preliminaries on sets, functions, and relations, *Matrix Mathematics* covers all of the major topics in matrix theory, including matrix transformations; polynomial matrices; matrix decompositions; generalized inverses; Kronecker and Schur algebra; positive-semidefinite matrices; vector and matrix norms; the matrix exponential and stability theory; and linear systems and control theory. Also included are a detailed list of symbols, a summary of notation and conventions, an extensive bibliography and author index with page references, and an exhaustive subject index. This significantly expanded edition of *Matrix Mathematics* features a wealth of new material on graphs, scalar identities and inequalities, alternative partial orderings, matrix pencils, finite groups, zeros of multivariable transfer functions, roots of polynomials, convex functions, and matrix norms. Covers hundreds of important and useful results on matrix theory, many never before available in any book. Provides a list of symbols and a summary of conventions for easy use. Includes an extensive collection of scalar identities and inequalities. Features a detailed bibliography and author index with page references. Includes an exhaustive subject index with cross-referencing.

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Dennis S. Bernstein is professor of aerospace engineering at the University of Michigan.

I decided to buy a copy after finding myself repeatedly borrowing a copy of the (hardback) first edition from a colleague. In terms of content, the book remains excellent, but the quality of the binding is not good. After having it a week, I am afraid it will burst in half every time I open it. Very poor for a resource I was planning to keep on my shelf for years.

The book is comprehensive and certainly worthwhile on one's bookshelf, but only in hard copy. I

bought the kindle edition in which the equations are almost illegible - sufficiently so that I will be asking for my money back as it is practically useless as a reference.

This is not intended to be a text book. It is, however, a brilliant reference, and really a must-own for anyone doing research in a field that heavily involves linear algebra. The only thing I've found not exhaustively covered is the calculus of functions of matrices. There are some results, but some useful ones are missing, or perhaps stated in forms that are difficult to recognize. The notation can be a little cryptic and contrary to convention in places. Still, there's a thorough list of notation at the beginning, so it's not really an issue. My biggest complaint is that it's heavy as hell. It should probably be broken into two books if he writes a third edition.

Extremely important book !

This book is a very complete encyclopedia of matrix properties, or as the subtitle puts it "Theories, facts and formulas". As every good encyclopedic work, this book is not meant to be read from A to Z, but rather serves as a reference work that will never quit your desk.

This is a good book by a reputable author. However, the Kindle edition is poorly typeset. I have the printed copy and much prefer the print over the Kindle edition.

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