



## A Survey of Matrix Theory and Matrix Inequalities

By Mathematics

Dover Publications. Paperback. Book Condition: New. Paperback. 192 pages. Dimensions: 8.2in. x 5.3in. x 0.5in. Written for advanced undergraduate students, this highly regarded book presents an enormous amount of information in a concise and accessible format. Beginning with the assumption that the reader has never seen a matrix before, the authors go on to provide a survey of a substantial part of the field, including many areas of modern research interest. Part One of the book covers not only the standard ideas of matrix theory, but ones, as the authors state, that reflect our own prejudices, among them Kronecker products, compound and induced matrices, quadratic relations, permanents, incidence matrices and generalizations of commutativity. Part Two begins with a survey of elementary properties of convex sets and polyhedra and presents a proof of the Birkhoff theorem on doubly stochastic matrices. This is followed by a discussion of the properties of convex functions and a list of classical inequalities. This material is then combined to yield many of the interesting matrix inequalities of Weyl, Fan, Kantorovich and others. The treatment is along the lines developed by these authors and their successors and many of their proofs are included. This chapter contains an account...



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