REVIEWS AND DESCRIPTIONS OF TABLES AND BOOKS

The numbers in brackets are assigned according to the indexing system printed in Volume 22, Number 101, January 1968, page 212.

49 [2.00, 3, 4, 5, 6, 7, 8].—CARL-ERIK FROBERG, *Introduction to Numerical Analysis*, Addison-Wesley Publishing Co., Reading, Mass., 1969, xii + 433 pp., 24 cm. Price $11.95.

This is an expansion and revision of the 1st edition of 1965 which in turn was a translation and minor revision of the 1962 Swedish original. The first edition covered a wide range of topics within its 340 pages: nonlinear equations, linear systems and matrix inversion, matrix eigenvalue problems, approximation, interpolation and numerical quadrature, ordinary and partial differential equations, Monte Carlo, and linear programming. Moreover, within each of these broad headings, the author tried to say something about a great variety of methods and subtopics with the result that a large portion of the book is either written in a terse style that the un-initiated will find tough going or is so condensed as to be almost useless (e.g., two pages on boundary value problems for ODE, one page on systems of nonlinear equations, a half page on the LR method). Although this revision amplifies a few discussions (e.g., stability of multistep methods), the bulk of the additional 100 pages goes to new topics including the optimum ω for SOR, the QR method, Hyman's method, the Adams-Bashford-Moulton methods, and two new chapters on linear integral equations and special functions. But, again, some of this new material is so condensed that its value is questionable (e.g., one page on Fredholm equations of the first kind with no mention of the intrinsic difficulties associated with this problem).

Moreover, such serious deficiencies of the first edition as lack of discussion of interchanges with Gaussian elimination have not been corrected.

Nevertheless, the reviewer feels that this book is one of the better introductions available and, in the hands of an experienced instructor willing to amplify, clarify, and edit, can be a satisfactory text for both one and two semester undergraduate courses.

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50 [2.00, 3, 4, 5, 13. 35].—SHAHEN A. HOVANESSIAN & LOUIS A. PIPES, *Digital Computer Methods in Engineering*, McGraw-Hill Book Co., New York, 1969, xvi + 400 pp., 24 cm. Price $14.50.

This book covers most of the standard problem areas expected in an introduction to numerical analysis, but also contains short chapters on linear and dynamic programming and the fast Fourier transform. Many methods are illustrated by Fortran programs and each chapter ends with exercises, mostly of elementary mathematical type.

With the exception of three or four examples and a few exercises, however, the book is not especially directed towards engineers and must be judged in relation to the many standard numerical analysis texts which now exist. In this comparison,