

These main tables employ a more concise format than the earlier tables; however, the manner in which they are to be used is carefully explained.

There are also three appendices to the main tables. The first contains the actual decimal digits of all prime and probable prime factors in the main table that exceed 25 digits. The second supplies a short summary of the proof of primality of each prime between 25 and 72 digits. As the authors were not able to completely factor several of the numbers in their tables, they present, in the third appendix, the decimal digits of each composite cofactor which is no more than 64 digits.

The authors also provide a chapter on the developments in technology that have permitted them to complete this work. This is a fascinating blend of history, computing and the theory of factorization and primality testing. Unfortunately, the book was sent to press previous to two exciting new developments in this subject. The first of these is the primality test of Cohen and Lenstra (developed from the important work of Adelman, Pomerance, and Rumely), which will undoubtedly provide primality proofs for all the probable primes in the first appendix. The second is the implementation of the Quadratic Sieve Factoring technique by Davis and Holdridge. Indeed, activity in this subject is so great that the 10 "most wanted" factorizations listed by the authors have already been achieved, most of them by Davis and Holdridge.

A very useful feature of this work, especially in view of the intense activity mentioned above, is the provision of periodic updates, which will fit in a pocket in the back cover. One of these appears with the book now and another is to come very soon; still others are expected to follow.

This remarkable book, the product of decades of work, is indispensable to anyone who is interested in the problems of factoring and primality testing. It should be especially enlightening to those individuals who believe that nobody did any "serious factoring" previous to the last ten or fifteen years.

H. C. W.

9[65–06].—DAVID F. GRIFFITHS (Editor), *Numerical Analysis*, Lecture Notes in Math., Vol. 1066, Springer-Verlag, Berlin, 1984, ix + 275 pp., 24 cm. Price \$14.00.

These are the proceedings of the 10th biennial conference on Numerical Analysis, held at Dundee June 28–July 1, 1983, containing 15 of the invited lectures. Among the subject areas represented are spline approximation, nonlinear equations and optimization, ordinary and partial differential equations, and weakly singular integral equations.

W. G.

10[41–02].—C. K. CHUI, L. L. SCHUMAKER & J. D. WARD (Editors), *Approximation Theory IV*, Academic Press, New York, 1983, xvii + 785 pp., 23½ cm. Price \$50.00.

This volume contains seven survey papers (289 pages) and 74 short research papers (447 pages) given at an international symposium on Approximation Theory held on the campus of Texas A & M University at College Station January 10–14,

1983. The survey papers are: "The best approximation of multivariate functions by combinations of univariate ones" by E. W. Cheney; "Recent progress in multivariate splines" by W. Dahmen & C. A. Micchelli; "A survey of some recent developments of approximation theory in China" by L. C. Hsu; " n -widths in approximation theory: A survey" by A. Pinkus; "General algorithms for discrete nonlinear approximation calculations" by M. J. D. Powell; "Incomplete and orthogonal polynomials" by E. B. Saff; "Truncation and factorization of biinfinite matrices" by P. W. Smith. In addition, there is a bibliography including 771 items on the theory and application of Bernstein-type operators compiled by H. H. Gonska & J. Meier.

W. G.