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12[65-04].—WILLIAM H. PRESS, BRIAN P. FLANNERY, SAUL A. TEUKOLSKY & WILLIAM T. VETTERLING, *Numerical Recipes in Pascal—The Art of Scientific Computing*, Cambridge Univ. Press, Cambridge, 1989, xxii + 759 pp., 24 cm. Price $47.50.

This is a Pascal version of the original *Numerical Recipes*, published in 1986 and reviewed in [1]. To quote from the authors' Preface: "Pascal was not,

of course, entirely neglected in the original version of *Numerical Recipes*. An Appendix, at the back of that book, contained Pascal translations of all the FORTRAN subroutines and functions. These translations were workable, but not very stylish, and they were printed in a condensed, unreadable format, without comments. Many Pascal users let us know, in no uncertain terms, what they thought of that!

"In this edition, therefore, all of the procedures have been completely rewritten, in a consistent Pascal style, one which makes use of pointers, dynamic memory allocation, and other features not found in the original FORTRAN subroutines."

W. G.

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13[65-01].—FRANCIS SCHEID, 2000 *Solved Problems in Numerical Analysis*, Schaum's Solved Problems Series, McGraw-Hill, New York, 1990, v + 698 pp., $27\frac{1}{2}$ cm. Price: Softcover $19.95.

This is an extensive collection of problems in numerical analysis, at the upper undergraduate or beginning graduate level, with complete solutions provided for each problem. The coverage is rather complete, although differential equations (ordinary and partial) are underrepresented relative to their importance. The extent of coverage can be gathered from the following summary: Machine arithmetic and errors (Chs. 1–2): 28 pages; Summation of series (Ch. 9): 45 pages; Interpolation (by polynomials and spline functions, Chs. 3–6): 128 pages; Numerical differentation and integration (Chs. 7–8): 101 pages; Approximation (least squares, minimax and L_1, by polynomials, rational, and trigonometric functions, Chs. 12–15 and 19): 124 pages; Numerical linear algebra (linear systems, matrix inversion and eigenvalues, Ch. 17): 57 pages; Nonlinear equations (Ch. 16): 35 pages; Optimization (Ch. 18): 29 pages; Difference equations (Ch. 10): 36 pages; Ordinary differential equations (initial and boundary value problems, Ch. 11 and Ch. 20.1–4): 85 pages; Partial differential equations (boundary value problems, Ch. 20.5–8): 17 pages; Monte Carlo methods (Ch. 21): 8 pages. There is a 4-page subject index, but no bibliography.

The majority of problems are of the pencil-and-paper and desk computer variety. The inclusion of substantial computer assignments, and more emphasis on questions of numerical stability that such assignments could help illustrate, would have enhanced the value of this collection. Even so, it represents a rich source of problems. Instructors and students alike will benefit from it, the former in selecting homework problems, the latter for reviewing a particular subject area and acquiring the necessary problem-solving skills in it.

W. G.