"(5-1)"; no difficulty will be found in reading "manager" for "manaser" on the fifth line of p. 112.

The author does not claim to have written the definitive work; avenues for further research are suggested. Other approaches have been proposed in the technical literature. Recently, Cohen and Hammer (*Management Science* 12:1, pp. 68–82) proposed a linear programming formulation of the scheduling interest coupons. In the meantime, this tour-de-force will serve as the most complete overall analysis of the problem available.

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76[W, Z].—JAMES MARTIN, *Programming Real-Time Computer Systems*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1965, xii + 386 pp., 24 cm. Price $11.75.

This reviewer objects to the current ambiguous use of the term "real-time," which is continued in this book. A distinction ought to be made, once and for all, between rapid systems response for comfort and convenience, and response required by the physical process being monitored or controlled. The most dramatic contrast between these two different kinds of systems requirements, both called "real-time" by the author, may be found on p. 22: "It may be installed to give speedier action . . . for example, bank customers queueing to draw cash in their lunch hour, or two airplanes on a possible collision course."

The reviewer also found somewhat misleading the use of the term "programming" in the title of the book.

The first third of this book discusses, on a very elementary level, the advantages and disadvantages of "real-time" systems, their history, and some examples of their implementation.

Beginning in the middle of the book, the author proceeds to more serious discussions. He addresses himself to techniques found essential or useful, with enough detail to satisfy managers of programming teams or of computer installations.

In the final third of the book, Mr. Martin draws on extensive experience with the sample systems described to present a convincing chronicle of the many pitfalls that await the naive traveler down the path of multiprogrammed, multiprocess, on-line system design.

The book is highly recommended for those in management contemplating the use, creation, or installation of new systems in the true "real-time," the "pseudo-real-time," or other multi-access, quick-response modes of operation.

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77[X].—V. K. SAUL'YEV, *Integration of Equations of Parabolic Type by the Method of Nets*, The Macmillan Company, New York, 1964, xvii + 346 pp., 23 cm. Price $12.00.

This is a translation by G. E. Tee of the original Russian monograph, which

appeared in 1960. Written for the user rather than the specialist, it provides a well documented and fairly complete survey of finite-difference methods for the numerical solution of parabolic partial differential equations. The notation and style are classical and no highly specialized mathematical knowledge is required for its reading. Although it is certainly a practical book, it is definitely not a cookbook. However, in order to make the book accessible to a wide range of scientists and engineers, the author does avoid a rigorous mathematical formulation and has omitted the details of many proofs.

The book is divided into two parts. Part I is devoted to the construction, stability and convergence of various difference schemes for parabolic operators. Included are all of the classical difference schemes and several recent ones, many of which have appeared before only in the Russian literature. The second part describes methods for the practical solution of systems of equations arising from the implicit parabolic difference equations considered in Part I. Included are direct methods, simple and block iterative methods, variational methods, and Chebyshev semi-iterative methods.

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78[X].—FRANK G. LETHER, *Abscissas for Chebyshev Quadrature*, Computer Center, University of Utah, Salt Lake City, Utah. Ms. of six typewritten pages deposited in the UMT File.

Values of the abscissas for the Chebyshev quadrature formula with unit weight function are herein tabulated to 95D for $n = 2(1)7$ and 9. The author in his introduction cites Bernstein's theorem [1] that for no other values of n greater than 1 are all the abscissas real.

The abscissas were calculated as the zeros of the associated polynomials by means of the Newton algorithm, using as initial values the 10D approximations of Salzer [2]. The underlying computations were carried to 100D on an IBM 7044, using multiple-precision arithmetic.

The careful overall checks applied to the final results inspire confidence in the accuracy of these extended tabular values.

J. W. W.

1. S. N. BERNSTEIN, "Sur les formules de quadrature de Cotes et Tchebycheff," *Dokl. Akad. Nauk SSSR*, v. 14, 1937, pp. 323–326.

2. H. E. SALZER, "Tables for facilitating the use of Chebyshev's quadrature formula," *J. Math. Phys.*, v. 26, 1947, pp. 191–194.

79[X].—WALTER JENNINGS, *First Course in Numerical Methods*, The Macmillan Company, New York, 1964, xiv and 233 pp. 24 cm. Price $7.50.

The purpose of this book is to serve as an introduction to Numerical Analysis for an undergraduate student of science or engineering, presupposing only the calculus and differential equations. According to the author, the book is intended to present Numerical Analysis "in breadth rather than depth, without being superficial," to lay an adequate groundwork for the study of the more sophisticated problems of Numerical Analysis, and to motivate students to continue their studies