In the above, $V(\lambda)$ is the relative spectral luminosity—an empirical function which is given in Table 1, page 3, to 3S for $\lambda = 385(5)780$ nm [1,000 nm $= 1$ μm]. Two values of c_2 are used; namely 14380 and 14420 m°K. Values of S and H corresponding to the first and second value of c_2 are termed S_1, H_1 and S_2, H_2, respectively. The main table, consisting of 120 pages, gives S_1, S_2, H_1, H_2 to $7S$ for $\lambda = 350(5)$ 845 nm, for each of 60 values of T, ranging between 973.15°K and 15,000°K. The decimal point has been omitted; it belongs "in the first gap" of the tabular entry, as stated in the Introduction. Since H depends on $V(\lambda)$, it is not known to more than three significant figures. The inclusion of seven digits (and the omission of the decimal point) must be ascribed to the needs of mass-production handling. Two-page tables of ΣS_i and ΣH_i, where $i = 1, 2$, are given, for the values of T of the main table; another two pages contain their common logarithms. Table 5 (the last) is a one-page tabulation of $B = 60 \int_0^\infty H(\lambda, T)\, d\lambda / \int_0^\infty H(\lambda, T_{pt})\, d\lambda$ for $c_2 = 14380$ and $T_{pt} = 2042.15$ (units the same as before), for 24 values of T.

The introductory material is given in both German and English. The table proper is a clear, legible reproduction of IBM tabulations. The calculations of S appear to be correct. However, the values of ΣS_i are reliable to only three significant figures, according to tests made by the reviewer.

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55[W, X, Z].—Saul I. Gass, *Linear Programming, Methods and Applications*, McGraw-Hill Book Company, New York, 1964, xii + 280 pp., 24 cm. Price $8.95.

This is the second edition of this work, which originally appeared in 1958 and was reviewed in *MTAC*, v. 13, 1959, pp. 60–61. The book is intended as a text for a rather complete first course in linear programming at an upper-undergraduate or graduate level. Care has been given to make it especially understandable and useful for the non-mathematics major.

Other than the correction of typographical errors, the reviewer could find no significant alteration of the original text, but several additions enhance its usefulness. The number of exercises at the end of each chapter has been increased. A number of the added exercises are of a rather simple computational nature to help the less mature reader. Several explanatory footnotes and short paragraphs have been scattered throughout the volume. The results of an iteration missing in the first edition have been added to the example on page 109.

The more significant changes from the original text are as follows: the Survey of Linear-Programming Applications has been moved from Chapter II to the Introduction, where it belongs. A paragraph has been added on page 70 to note how the determinants of the bases used in the simplex procedure can be readily obtained as a by-product of the computation. A short statement about slack variables has been expanded to a full section on pages 76 and 77.

A valuable nine-page section on sensitivity analysis has been added to the end of the chapter on parametric linear programming. Full sections on integer linear programming and the decomposition algorithm of Dantzig and Wolfe to reduce computation in solving large-scale systems have been added to the chapter entitled Additional Computational Techniques.

The listing of available digital computer codes has been expanded. The original list referred to 10 machines of four manufacturers; the new list covers 28 machines made by 11 firms. One doubts the wisdom of including such a list in a basic text of this type, since it will be necessarily dated and incomplete. Furthermore, a reader with a problem will have a very limited number of machines available to him on a practical basis, and will query those installations for available codes, anyway.

The excellent, complete bibliography has been brought up to date.

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56[X].—J. C. BUTCHER, *Tables of Coefficients for Implicit Runge-Kutta Processes*, ms. of 9 sheets deposited in the UMT File.

In a paper (*J. Austral. Math. Soc.*, v. 3, 1963, pp. 185–201) Butcher generalized the idea of Runge-Kutta integration to include implicit as well as explicit problems. At the same time he cleared up a number of theoretical points related to the use of Runge-Kutta methods for systems of differential equations. In two subsequent papers (*Math. Comp.*, v. 18, 1964, pp. 50–64 and pp. 233–244) Butcher considered various aspects of implicit Runge-Kutta processes. In particular, he derived formulas for the weights and parameters of Runge-Kutta methods based on the abscissas of the Legendre-Gauss, Radau, and Lobatto quadrature formulas.

In the tables being reviewed here values of these weights and parameters are given for values of m, the number of terms in the Runge-Kutta sum, ranging from 3 to 10. The order of accuracy of the Runge-Kutta methods are $2m$ in the Legendre-Gauss case, $2m - 1$ in the Radau case and $2m - 2$ in the Lobatto case. All quantities in the tables are claimed to be in error by less than 10^{-20}.

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57[X].—IRVING ALLEN DODES & SAMUEL L. GREITZER, *Numerical Analysis*, Hayden Book Company, Inc., New York, 1964, 390 pp., 23 cm. Price $9.95.

This is an elementary book on numerical analysis based on a course that has been taught at the Bronx High School of Science since 1955. Table of Contents: Desk Calculator Arithmetic, Chapter 1; Iterative Techniques, Chapter 2; Statistical Analysis: Condensation, Chapter 3; Comparing Two Distributions for Similarity, Chapter 4; Comparison for Difference, Chapter 5; The Problem of Prediction, Chapter 6; Writing a Research Paper in the Sciences, Chapter 7; Solving an Equation by Iteration, Chapter 8; Determinants and Matrices, Chapter 9; Linear Programming, Chapter 10; Dimensional Analysis, Chapter 11; Getting About on the Earth, Chapter 12; Mathematics of Astronomy, Chapter 13; Empirical Formulas and Interpolation, Chapter 14.

P. J. D.