1. PHILIP RABINOWITZ & GEORGE WEISS, "Tables of abscissas and weights for numerical evaluation of integrals of the form $\int_0^\infty e^{-x}x^n f(x)dx$," *MTAC*, v. 13, 1959, pp. 285–294.
2. A. H. STROUD & DON SECREST, *Gaussian Quadrature Formulas*, Prentice-Hall, Englewood Cliffs, N. J., 1966, pp. 254–275.

41[2.10].—H. TOMPA, *Abscissae and Weight Factors for Gaussian Integration with* $N = 192$, one typewritten p. + two computer sheets deposited in UMT file.

In a recent note [1] the author has described an algorithm for performing Gaussian quadrature with $N = 2^j$ and $3 \cdot 2^{j-1}$. For such values of N, 30S approximations to the abscissas and weight factors are available [2] up to $j = 9$ and 8, respectively, except for $N = 192$. This omitted case is covered by the present manuscript table, which gives the pertinent data to 21D.

The underlying calculations were performed on an IBM 1620 using floating-point arithmetic with a 25-digit mantissa and a greatly simplified version of the FORTRAN program given on pp. 29 and 30 of [2].

J. W. W.

1. H. TOMPA, "Gaussian numerical integration of a function depending on a parameter," *Computer J.*, v. 10, 1967, pp. 204–205.
2. A. H. STROUD & DON SECREST, *Gaussian Quadrature Formulas*, Prentice-Hall, Englewood Cliffs, N. J., 1966.

42[2.10, 2.15, 2.25, 2.35, 3, 8, 12, 13].—WILLIAM S. DORN & HERBERT J. GREENBERG, *Mathematics and Computing: with Fortran Programming*, John Wiley & Sons, Inc., New York, 1967, xvi + 595 pp , 24 cm. Price $8.95.

This text is neither fish nor fowl, but a tasty mixture of both: the mathematics is eminently practical in its orientation, and the computing avoids a "cook-book" approach. The authors manage to weave together a number of subjects in a way that leads the student in a variety of interesting directions—differential and integral calculus, infinite series, iterative and finite methods for linear and nonlinear systems, logic, and probability. The level of the text is appropriate for perhaps freshmen or sophomores, or for bright high school students.

It might be appropriate to characterize the book as a beginner's introduction to numerical analysis, since there is emphasis on how to go about finding solutions to real-life problems and how to handle the difficulties that typically arise. Since it is written in an easy-going style with extensive discussion of each topic, the book should give the lecturer freedom to emphasize particular aspects in greater detail with the assurance that the student will be able to cover others on his own.

JOHN R. EHRMAN

Stanford Linear Accelerator Center
Stanford University
Stanford, California

43[2.10, 2.35].—PHILIP J. DAVIS & PHILIP RABINOWITZ, *Numerical Integration*, Blaisdell Publishing Co., Waltham, Mass., 1967, ix + 230 pp., 23 cm. Price $7.50.

"In writing this book, we have tried to keep our feet on the ground and our head in the clouds: By ground we imply utility in day-to-day computation and know-how of the computer laboratory; by clouds, theoretical topics that underlie numerical integration. The prerequisite for this book is a course in advanced calculus. It would also be helpful, though not strictly necessary, if the reader had an introductory course in numerical analysis so that he will be familiar with the motivation and the goals of computing. There are several places where some mathematics beyond calculus is used, but they are relatively few. The book is not wholly self-contained; nor has it been possible to include proofs for all statements made. Where these gaps occur, references to other texts or to original articles have been given."

The authors succeed by presenting the subject from a mature point of view and in delightfully readable prose. The mathematics is as sophisticated as the subject matter demands (and on rare occasions, complex variable theory and functional analysis are appealed to). The modest size of this comprehensive monograph reflects the care with which the authors have selected their material. This book will prove to be invaluable to anyone interested in using and/or studying numerical integration and sets a standard for the Blaisdell series which it is going to be hard to maintain. A listing of the chapter headings and appendices will serve to outline the wide scope of the book.

1, Introduction; 2, Approximate Integration over a Finite Interval; 3, Approximate Integration over Infinite Intervals; 4, Error Analysis; 5, Approximate Integration in Two or More Dimensions; 6, Automatic Integration;

Appendix 1, "On the Practical Evaluation of Integrals" by Milton Abramowitz;
Appendix 2, Some FORTRAN Programs;
Appendix 3, Bibliography of ALGOL Procedures;
Appendix 4, Bibliography of Tables;
Appendix 5, Bibliography of Books and Articles.

E. I.

44[2.10, 7].—E. N. DEKANOSIDZE, *Tabitsy korneı i vesovykh mnozhiteleı obobshchennyĭ polinomov Lagerra* (*Tables of the zeros and weight factors of the generalized Laguerre polynomials*), Computing Center, Acad. Sci. USSR, Moscow, 1966, xx + 306 pp., 27 cm. Price 2.33 rubles.

The main table (Table I, pp. 1–301) consists of 15S approximations (in floating-point form) to the zeros $x_i^{(n;\,\alpha)}$ of the generalized Laguerre polynomials, defined by the Rodrigues formula

$$L_n^{(\alpha)}(x) = \frac{x^\alpha e^x}{n!} \frac{d^n}{dx^n} (x^{\alpha+n} e^{-x}) ,$$

and to the associated weight factors $A_i^{(n;\,\alpha)}$ and $B_i^{(n;\,\alpha)}$ $(= A_i^{(n;\,\alpha)} \exp [x_i^{(n;\,\alpha)}])$ occurring in the Gaussian quadrature formulas

$$\int_0^\infty e^{-x} x^\alpha f(x) dx \approx \sum_{i=1}^n A_i^{(n;\,\alpha)} f(x_i^{(n;\,\alpha)}) ,$$

$$\int_0^\infty x^\alpha f(x) dx \approx \sum_{i=1}^n B_i^{(n;\,\alpha)} f(x_i^{(n;\,\alpha)}) .$$

The tabular ranges of the parameters are $i = 1(1)n$, $n = 2(1)16$, $\alpha = 0(-0.01) -0.99$. The values for $n = 1$ are omitted; however, in the introduction the author