REVIEWS AND DESCRIPTIONS OF TABLES AND BOOKS

1[2.10, 7].—O. V. Baburin & V. I. Lebedev, "O vychislenii tablits korneĭ i vesov polinomov Érmita i Liagerra dlia $n = 1(1)101$" ("On the calculation of a table of zeros and weights of Hermite and Laguerre polynomials for $n = 1(1)101$"), *Zh. Vychisl. Mat. i Mat. Fiz.*, v. 7, 1967, pp. 1021–1030.

Herein are described the mathematical and computational details (including error estimates) of the electronic digital calculation of the zeros of the first 101 Hermite and Laguerre polynomials, respectively, and of the coefficients (weights) for the associated quadrature formulas

$$\int_a^b p(x)f(x)dx = \sum_{k=1}^{n} B_k F(x_k) + R_n ,$$

where $F(x_k) = p(x_k)f(x_k)$; $p(x) = e^{-x^2}$, $a = -\infty$, $b = \infty$, for Gauss-Hermite quadrature; and $p(x) = e^{-x}$, $a = 0$, $b = \infty$, for Gauss-Laguerre quadrature.

Excerpts of this table that are reproduced in this paper consist of 16S values of the zeros, x_k, and weights, B_k, for $n = 60$, 100, and 101 for the Hermite polynomials (Tables 1–3), and for $n = 60$ and 100 for the Laguerre polynomials (Tables 4, 5).

This reviewer has compared the contents of Table 5 with the corresponding 24S values in the unpublished table of Berger & Danson [1], and has detected just two discrepancies; namely, the first two values of B in Table 5 are too high by three units and one unit, respectively, in the last decimal place. A comparison of the zeros of both the Hermite and Laguerre polynomials when $n = 60$ (Tables 1 and 4) with the corresponding 30S approximations in the tables of Stroud & Secrest [2] has revealed no discrepancies. Comparison of the corresponding weights was not possible, inasmuch as Stroud & Secrest tabulate coefficients A_i, which are equal to $p(x_i) \cdot B_i$, in the notation of this paper.

So far as the reviewer is aware, the data constituting Tables 2 and 3 appear to be new.

Appended to this informative and useful paper is a list of the nine references that are cited in the text.

J. W. W.

1. B. S. Berger & R. Danson, *Tables of Zeros and Weights for Gauss-Laguerre Quadrature*, ms. deposited in UMT file. (See *Math. Comp.*, v. 22, 1968, pp. 458–459, UMT **40.**)
2. A. H. Stroud & D. Secrest, *Gaussian Quadrature Formulas*, Prentice-Hall, Englewood Cliffs, N. J., 1966. (See *Math. Comp.*, v. 21, 1967, pp. 125–126, RMT **14.**)

2[4, 5, 6].—Susan J. Voight, *Bibliography on the Numerical Solution of Integral and Differential Equations and Related Topics*, Report 2423, Naval Ship Research and Development Center, Washington, D. C., November, 1967, ii, 526 pp., 27 *cm*.

This is a valuable reference. It covers various aspects of the numerical solution of differential (ordinary and partial) and integral equations including methods of solution, computer programs for developing solutions and existence and properties of the solutions. Mixed type equations are also covered. Related topics such as