

is briefly discussed (p. 296–297) in the chapter on special functions. Additional numerical data also include exact values of the first 17 Bernoulli numbers and the first 10 Euler numbers, 10D approximations to  $\zeta(n)$  for  $n = 2(1)11$ , and Euler's constant and Catalan's constant to 16D and 9D, respectively. I have examined all these data carefully, and the errors detected, together with errors in the formulas, are enumerated separately in this issue (MTE 293).

Use of the book is facilitated by an elaborate index of special functions and notations on p. 417–422. In addition to supplementary remarks and the bibliographies already mentioned, the Appendix contains (on p. 423–429) a discussion of the variations in the notation and symbols used for special numbers and functions throughout the mathematical literature and a concise list of abbreviations (p. 432–433).

The lucid expository style employed throughout is exemplified in the Introduction. Here, a systematic summary of definitions and theorems relating to infinite products and infinite series of various types supplements the list of relevant formulas. Similar explanatory text serves as introduction to several of the subsequent chapters and their subdivisions.

Typographical errors found in the text are minor and do not detract from the intelligibility of the textual material. The typography, especially in a compilation of such a large number of formulas, is uniformly excellent, and the appearance of the book is attractive. Professor Archibald's opinion that the first edition was "undoubtedly of considerable value for any mathematician to have at hand" certainly holds true for this latest version.

J. W. W.

1. I. M. RYZHIK & I. S. GRADSHTEYN, *Tablitsy Integralov, Summ, Riadov i Proizvedenii*, [Tables of Integrals, Sums, Series and Products], The State Publishing House for Technical and Theoretical Literature, Moscow, 1951.

2. R. C. ARCHIBALD, RMT 219, *MTAC*, v. 1, 1943/45, p. 442.

3. BIERENS DE HAAN, *Nouvelles Tables d'Intégrales Définies*, Leyden 1867. Reprinted by G. E. Stechert & Co., New York, 1939.

70[G].—EUGENE PRANGE, *An Algorithm for Factoring  $X^n - 1$  over a Finite Field*, AFCRC-TN-59-775, U. S. Air Force, Bedford, Mass., October 1959, iii + 20 p., 27 cm.

An algorithm is given for factoring  $X^n - 1$  over the finite field  $F_q$  of  $q$  elements. This can be of use in constructing another finite field over  $F_q$ , in constructing a linear recursion of period  $n$  over  $F_q$ , or in constructing cyclic error-correcting group codes. The algorithm has two parts: Step 1, the construction of the multiplicative identities of the minimal ideals of  $F_q[X]/[X^n - 1]$ ; Step 2, the use of these idempotents in the construction of the irreducible factors of  $X^n - 1$ .

#### AUTHOR'S ABSTRACT

71[G].—M. ROTENBERG, R. BIVINS, N. METROPOLIS & J. K. WOOTEN, JR., *The 3-j and 6-j Symbols*, The Technology Press, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1960, viii + 498 p., 29 cm. Price \$16.00.

Wigner's 3- $j$  symbol is closely related to the Clebsch-Gordan coefficients used in the coupling of angular momenta. If  $\mathbf{J}_1$  and  $\mathbf{J}_2$  are coupled to give  $\mathbf{J}$ , with  $j, j_1, j_2$  as the total-angular-momentum quantum numbers and  $m, m_1, m_2$  as the quantum