Also tabulated here to 101S are decimal approximations to $e^{\pm\pi/2}$, $e^{\pm\pi\sqrt{3}/2}$, $K(\sin 45°)$, and $K(\sin 15°)$.

Comparison of the last two constants with unpublished values by J. W. Wrench, Jr. to 164D and 77D, respectively, has revealed no discrepancies.

AUTHOR'S SUMMARY

1. CHIH-BING LING, "Evaluation at half periods of Weierstrass' elliptic functions with double periods 1 and $e^{i\alpha}$," *Math. Comp.*, v. 19, 1965, pp. 658–661.

66[7].—OSCAR L. FLECKNER, *Table of Values of the Fresnel Integrals*, ms. of 8 pp. deposited in the UMT file.

This manuscript table consists of 6D values of the Fresnel Integrals $(2\pi)^{-1/2}\int_0^x t^{-1/2}\cos t\,dt$ and $(2\pi)^{-1/2}\int_0^x t^{-1/2}\sin t\,dt$, which are generally designated $C((2x/\pi)^{1/2})$ and $S((2x/\pi)^{1/2})$, in the preferred notation appearing in the FMRC *Index* [1], for example. The author here uses the unfortunate notation $C(x)$ and $S(x)$ for these forms of the Fresnel Integrals. The range of argument is $x = 0(0.2)60$, which exceeds somewhat that of the 6D table of Pearcey [2], which covers the range 0(0.01)50.

Details of the computation of this table appear in a paper [3] published elsewhere in this journal.

J. W. W.

1. A. FLETCHER, J. C. P. MILLER, L. ROSENHEAD & L. J. COMRIE, *An Index of Mathematical Tables*, Vol. I, 2nd ed., Addison-Wesley Publishing Co., Reading, Mass., 1962, pp. 462–463.
2. T. PEARCEY, *Table of the Fresnel Integral to Six Decimal Places*, Cambridge Univ. Press, Cambridge, 1957. (See *MTAC*, v. 11, 1957, pp. 210–211, RMT **87**.)
3. O. L. FLECKNER, "A method for the computation of the Fresnel integrals and related functions," *Math. Comp.*, v. 22, 1968, pp. 635–640.

67[7].—M. LAL, *Exact Values of Factorials 200! to 550!*, Department of Mathematics, Memorial University of Newfoundland, St. John's, Newfoundland, August 1967, ms. of iii + 152 pp., 28 cm., deposited in the UMT file.

68[7].—M. LAL & W. RUSSELL, *Exact Values of Factorials 500! to 1000!*, Department of Mathematics, Memorial University of Newfoundland, St. John's, Newfoundland, undated, ms. of ii + 501 pp., 28 cm., deposited in the UMT file.

The tabular contents of these companion manuscript volumes are clearly indicated by the respective titles. In the first table the factorials are printed *in extenso*; in the second, the terminal zeros are suppressed, but their number is recorded at the end of each entry. Furthermore, in the second table a separate page is allotted to each entry. In each table the digits are printed in five decades per line, with a space between successive arrays of ten lines. Also, the lines for each entry are consecutively numbered in the right margin.

The introduction to the first volume mentions the published table of Uhler [1] containing exact values of factorials to 200!, and also refers to subsequent related calculations [2], [3], [4] by that author. However, earlier, less extensive tabulations by others [5] are not cited.

The first table was computed at Dalhousie University by means of an IBM 1620 and an IBM 1132 printer; the second was computed at the Memorial University of Newfoundland by means of an IBM 1620 and an IBM 407 Mod E8 printer.

These impressive tables evolved as a by-product of a search for integer squares of the form $n! + 1$ when n exceeds 7. This search, which has proved futile up to the limit $n = 1140$, extends earlier results of Kraitchik [6], as noted in the introduction to the first volume under review.

These attractive, clearly printed tables exemplify the excellent output obtainable from electronic digital computers in conjunction with meticulous planning and editing.

J. W. W.

1. H. S. UHLER, *Exact Values of the First 200 Factorials*, New Haven, 1944. (See *MTAC*, v. 1, 1943–1945, p. 312, RMT **158**; p. 452, UMT **36**.)
2. H. S. UHLER, "Twenty exact factorials between 304! and 401!", *Proc. Nat. Acad. Sci. U. S. A.*, v. 34, 1948, pp. 407–412. (See *MTAC*, v. 3, 1948–1949, p. 355, RMT **579**.)
3. H. S. UHLER, "Nine exact factorials between 449! and 751!," *Scripta Math.*, v. 21, 1955, pp. 138–145.
4. H. S. UHLER, "Exact values of 996! and 1000!, with skeleton tables of antecedent constants," *Scripta Math.*, v. 21, 1955, pp. 261–268. (See *MTAC*, v. 11, 1957, p. 22, RMT **1**.)
5. A. FLETCHER, J. C. P. MILLER, L. ROSENHEAD & L. J. COMRIE, *An Index of Mathematical Tables*, Vol. I, 2nd ed., Addison-Wesley Publishing Co., Reading, Mass., 1962, p. 47.
6. M. KRAITCHIK, "On the divisibility of factorials," *Scripta Math.*, v. 14, 1948, pp. 24–26. (See *MTAC*, v. 3, 1948-1949, pp. 357-358, RMT **587**.)

69[7].—ALDEN MCLELLAN IV, *Tables of the Riemann Zeta Function and Related Functions*, Desert Research Institute, University of Nevada, Reno, Nevada, ms. in 5 volumes, the first of 88 pp. the others of 83 pp. each, 28 cm., deposited in the UMT file.

In addition to the Riemann zeta function, $\zeta(x)$, here attractively tabulated to 41S (with respect to $\zeta(x) - 1$) for $x = 0(0.005)1(0.01)10(0.02)58$, we find in the four accompanying tables decimal values of functions designated by the author as $\alpha(x)$, $\lambda(x)$, $\eta(x)$, and $\xi(x)$. The range here is $x = 1(0.01)10(0.02)58$ and the precision is 41S, except for $\lambda(x)$, where from 31 to 40S of $\lambda(x) - 1$ are tabulated. (All the tabular entries have been left unrounded.) These four functions can be expressed in terms of $\zeta(x)$ by the relations:

$$\alpha(x) = 2^{-x}\zeta(x)\,, \qquad \lambda(x) = (1 - 2^{-x})\zeta(x)\,,$$
$$\eta(x) = (1 - 2^{-x+1})\zeta(x)\,, \qquad \xi(x) = 2^{-x}(1 - 2^{-x+1})\zeta(x)\,.$$

Each of these functions has been previously tabulated; however, the earlier tables, except for those of $\zeta(x)$, have been restricted to integer values of the argument. Moreover, the notation employed in earlier tables, including those by Glaisher [1], Davis [2], and Liénard [3], differs from that adopted herein by Dr. McLellan. The two sets of notation are related as follows:

$$S_n = \zeta(n)\,, \quad U_n = \lambda(n)\,, \quad s_n = \eta(n)\,, \quad 2^{-n}S_n = \alpha(n)\,, \quad 2^{-n}s_n = \xi(n)\,.$$

The present tables are not accompanied by any explanatory text; however, the introduction to a preliminary abridged table [4] by the same author reveals that the calculations were based upon Euler's transformation as applied to the alternating series derived from the standard series for $\zeta(x)$ by means of van Wijngaarden's transformation [5]. Furthermore, this reviewer has ascertained that the calculations were performed on an IBM 1620 II computer, using a program written in machine language.

It might be noted that the most elaborate previous tabulation of $\zeta(x)$ for decimal