and numerical construction of periodic solutions. In attempting "to present a self-contained and readable account for mathematicians, physicists, and engineers" the author includes the statement of many basic theorems of ordinary differential equation theory and, with the aid of a mysterious selection principle, some proofs. As a consequence, a careful nonspecialist must have access to a modern textbook on ordinary differential equations; hence, he does not need at least half the monograph. Since the specialist will proceed directly to the more advanced topics, the supplementary material is presumably intended for those who want to refer to the theorems and need to see enough proofs so that they can believe that a complete theory exists.

The material most likely to be of interest to numerical analysts is included in a chapter on the numerical computation of periodic solutions and in an appendix on Newton's method and numerical methods for solving ordinary differential equations. In the chapter the author reduces the search for the initial values of a periodic solution of an nth order system of ordinary differential equations to the solution by Newton's method of a system of $n - 1$ algebraic equations. The functions occurring in the algebraic equations are evaluated by integrating the differential equations written relative to a moving orthogonal coordinate system. The problem is nontrivial and is carefully treated. Several numerical examples and graphs are included. In addition, the Galerkin procedure is briefly discussed.

In general, the book is carefully written and can be used as a supplementary text for a course in ordinary differential equations or numerical analysis. The students should be warned, however, that the author sometimes uses inappropriate mathematical formalisms in heuristic discussions. For example, on p. 298 in a discussion of when to terminate an iterative scheme in a practical computation, we are told to take $\epsilon = o(\alpha)$, where ϵ is the given bound on the error and α is the cutoff criterion. On the other hand, in mathematical discussions, the terms "small," "accurate" and "approximate" are used most casually. For example, on p. 283 in a discussion of an iterative solution to $x = f(x)$, he writes "if [the starting approximate solution] x_0 is accurate, then the quantity $|f(x_0) - x_0| = |x_1 - x_0|$ is small." One is reminded of the ancient joke, Q. "How's your wife?", A. "Compared to what?"

TOM KYNER

University of Southern California
Mathematics Department
Los Angeles, California

65[7].—CHIH-BING LING, *On the Values of Two Coefficients related to the Weierstrass Elliptic Functions*, Virginia Polytechnic Institute, Blacksburg, Virginia, January 1968, ms. of 4 typewritten sheets deposited in UMT file.

Using Jacobi theta functions, the author has herein extended to 101S the results of his previous calculation [1] of the following two coefficients, which are related to the Weierstrass functions of double periods $(1, i)$ and $(1, e^{\pi i/3})$, respectively:

σ_4 = 3.15121 20021 53897 53821 76899 42248 68855 66455 19354 51485
24384 70540 35738 42598 37682 74612 16108 69439 55074 50822,

σ_6 = 5.86303 16934 25401 59797 02134 43837 82343 75153 76204 12955
75122 82731 11230 49523 95831 56859 89351 55366 27614 95871.

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.