Similar check calculations for $f_2(x)$ reveal a persistent error of about 0.0024. Thus the tables of the numerical values of the integrals should be used, if at all, with caution. We have corresponded with one of the authors (D.J.B.). He has checked those entries in Tables 1 and 3 against known values of Legendre polynomials and finds that they are correct. The reason for the bias in the values of the integrals is not known, but he suspects that it arises from the binary-to-decimal conversion. We conclude with the "trite" observation that automatic computers cannot be trusted implicitly, and that the need for analysis and checking remains.

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1. A. Erdélyi, et al., *Higher Transcendental Functions*, Vol. 1, McGraw-Hill, New York, 1953.

8[L]. Ludo K. Frevel & J. W. Turley, *Tables of Iterated Sine-Integral*, The Dow Chemical Company, Midland, Michigan, 1961. Deposited in UMT File.

Three tables of decimal values of the iterated sine-integral, $\overset{n}{Si}\,(x)$, are herein presented, as computed on a Burroughs 220 system supplemented by Cardatron equipment, which permitted on-line printing of the results in the desired tabular format.

Table 1 presents the values of $\overset{n}{Si}\,(x)$ to 9D for $n = 1(1)10$, $x = 0(0.2)10$. Table 2 gives values of this function to 7D for $n = 0(0.05)10$, π, 2π, 3π, and Table 3 gives for $n = 1(1)10$ the values to 9D of the first thirty extrema, which correspond to $x = m\pi$, where $m = 1(1)30$.

In an accompanying text of three pages the authors describe in detail the method of calculation and the underlying mathematical formulas. It is there stated that the entries in Table 2 were computed to 9D prior to rounding. The entries in Table 3 are claimed to be accurate to within a unit in the final decimal place, and the authors imply in their explanatory text that comparable accuracy was attained in the computation of the entries in Table 1.

The tabular data corresponding to the values of n different from unity constitute an original contribution to the literature of mathematical tables.

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9[L, X]. Hans Sagan, *Boundary and Eigenvalue Problems in Mathematical Physics*, John Wiley & Sons, Inc., New York, 1961, xviii + 381 p., 24 cm. Price $9.50.

This attractive newcomer to the ranks of the textbooks on methods of mathematical physics comes to us directly from Moscow (where, for the past four years, the author has been an Associate Professor of Mathematics at the University of Idaho). This book contains material which has been used in the author's classes to seniors and beginning graduate students in mathematics, applied mathematics, physics, and engineering for the past five years. The author's stated purpose is not to present a vast number of seemingly unrelated mathematical techniques and tricks that are used in the mathematical treatment of problems which arise in physics and engineering, but rather to develop the material from a few basic concepts; namely, Hamilton's principle together with the theory of the first variation, and Bernoulli's separation method for the solution of linear homogeneous partial differential equations. The author's persuasive style appears certain to gain adherents for his viewpoints on many college campuses this coming fall.

Hamilton's principle and the theory of the first variation occupy Chapter 1. The representation of some physical phenomena by partial differential equations (vibrating string and membrane, heat conduction and potential equation) forms the subject matter of Chapter II. Chapter III contains general remarks on the existence and uniqueness of solutions and the presentation of Bernoulli's method of separation of variables, while Chapter IV is devoted to Fourier series. Chapter V deals with self-adjoint boundary-value problems, the concept of their eigenvalues being developed according to the elementary method of H. Pruefer in *Mathematische Annalen*, v. 95 (1926). Chapters VI and VIII, on special functions, deal with Legendre polynomials and Bessel functions, and spherical harmonics, respectively. Chapter VII develops the characterization of eigenvalues by a variational principle; while the final Chapter IX is devoted to the nonhomogeneous boundary-value problem (Green's function and generalized Green's function).

The text is well designed for class room use. The author intends it to be used in a two-semester three-credit course. Each chapter is generously provided with interesting exercises (answers and hints are provided at the end of the book for the even-numbered problems). A recommended supplementary reading list concludes each chapter. A welcome innovation is the detailed appendix, containing a condensation of topics with which "the student who wishes to take this course with a reasonable chance to succeed should be familiar."

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10[S]. Charles DeWitt Coleman, William R. Bozman & William F. Meggers, *Table of Wavenumbers*, Volumes I and II, U. S. Department of Commerce. Volume I—2000 A to 7000 A, and Volume II—7000 A to 1000 μ, 1960, vii + 500 p., and vii + 534 p., 35 cm. Price $6.00.

A two-volume table for converting wave lengths in standard air to wave numbers in vacuum was computed by using the equation $\sigma_{\text{vac}} = 1/(n\lambda_{\text{air}})$, where n was computed from Edlen's 1953 equation for the refractive index of air. Wave numbers are given to the nearest 0.001 K (cm^{-1}) for wave lengths from 2000 to 7000 A in volume I, and 7000 A to 1000 μ in volume II. Proportional tables are given for linear interpolation between entries of λ. Also included are the vacuum increase in wave length, $(n - 1)$, and the refractivity of standard air in the form $(n - 1) \times 1000$.

Authors' Summary

11[W]. Guy H. Orcutt, Martin Greenberger, John Korbel & Alice M. Rivlin, *Microanalysis of Socioeconomic Systems: A Simulation Study*, Harper & Brothers, New York, 1961, xviii + 425 p., 21 cm. Price $8.00.

In this book the authors discuss an experimental calculation carried out on a