separation of variables and uniqueness and stability results by means of energy and maximum norm a priori estimates.

Although over the last few years a number of treatments of partial differential equations have appeared, I have found it hard to find any particular book which is an ideal beginning graduate level text. Particularly in the subject under consideration, it is very hard to find the right balance between too much and too little, both in sophistication and in quantity of material. I think this book is what I have been waiting for. The translation is not perfect.

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24[7].—HENRY E. FETTIS & JAMES C. CASLIN, *Ten Place Tables of the Jacobian Elliptic Functions: Part* III, Report ARL 71-0081, Aerospace Research Laboratories, Air Force Systems Command, United States Air Force, Wright-Patterson Air Force Base, Ohio, May 1971, iv + 449 pp., 28 cm. Copies obtainable from the National Technical Information Service, Operations Division, Springfield, Virginia 22151. Price $3.00.

This report has been designed to supplement Part I [1] of these tables in the vicinity of $k^2 = 1$. Specifically, herein are tabulated 10D values of the Jacobian elliptic functions $am(u, k)$, $sn(u, k)$, $cn(u, k)$, and $dn(u, k)$, as well as the elliptic integral $E(am(u), k)$, for $k^2 = 0.950(0.001)0.999$ and $u = 0(0.01)K(k)$. Also, the headings of the tables include corresponding 10D values of $K(k)$ and $E(k)/K(k)$, where $K(k)$ and $E(k)$ conventionally represent the complete elliptic integrals of the first and second kinds, respectively.

As in the preparation of [1], the underlying calculations of these extensive tables were performed on an IBM 7094 system.

J. W. W.

1. HENRY E. FETTIS & JAMES C. CASLIN, *Ten Place Tables of the Jacobian Elliptic Functions, Part* 1, Report ARL 65-180, Aerospace Research Laboratories, Office of Aerospace Research, United States Air Force, Wright-Patterson Air Force Base, Ohio, September 1965. (See *Math. Comp.*, v. 21, 1967, pp. 264–265, RMT **25.**)

25[7].—SWARNALATA PRABHU, *Tables of the Incomplete Beta Function for Small Values of the Parameters*, Indian Institute of Science, Bangalore, India, v + 250 pp., 27 cm. (paperbound). Copy deposited in the UMT file.

These tables consist of 6S values of the incomplete Beta function $B_x(p, q)$ for $x = 0.01(0.01)0.50$ and $p, q = 0.02(0.02)0.50$, together with 6 or 7S values of $B(p, q)$ for the same range of p and q.

The underlying calculations were performed to 8S on a National Elliott 803 electronic computer, and the results corresponding to $p = 0.5$ and $q = 0.5$ were successfully compared with the corresponding entries in the well-known 7S tables of Pearson [1], for which these values of p and q constitute the lower limit of the parameters. Accordingly, the present tables have been designed to supplement Pearson's tables in this respect.

The author points out in the introduction that values of $B_x(p, q)$ for $x = 0.50(0.01)0.99$ and the tabular values of p and q can be readily derived from the tables by means of the known relation $B_x(p, q) = B(p, q) - B_{1-x}(q, p)$.

Also explained in the introduction are the methods followed in computing the tables and the procedure for interpolating therein by means of an eight-point Lagrange formula.

These tables, prepared in connection with a study of shock-wave propagation and radiation gas dynamics, have many other applications in physics and engineering and constitute a unique contribution to the tabular literature for the incomplete Beta function.

J. W. W.

1. KARL PEARSON, *Tables of the Incomplete Beta-Function*, Cambridge Univ. Press, 1934; reissued in 1968 in a revision edited by E. S. Pearson & N. L. Johnson.

26[7, 13.05].—I. M. KUNTSEVICH, N. M. OLEKHNOVICH & A. U. SHELEG, *Tables of Trigonometric Functions for the Numerical Computation of Electron Density in Crystals*, translated from Russian, Israel Program for Scientific Translations, Jerusalem, 1971, 218 pp., 25 cm. Price $12.—.

These unique tables (originally published in Minsk in 1967) consist of 4D tables of the functions $a_{h,k,l}(x, y, z)$ and $b_{h,k,l}(x, y, z)$, which are defined as the trigonometric sums $\sum \cos 2\pi hx \cos 2\pi ky \cos 2\pi lz$ and $\sum \sin 2\pi hx \sin 2\pi ky \sin 2\pi lz$ extended over all the permutations of h, k, l for each set of values of x, y, and z. The coordinates x, y, z are herein expressed as integer multiples of $1/60$, and are limited to the ranges $0 \leqq x \leqq 15/60$, $0 \leqq y \leqq x$, $0 \leqq z \leqq y$, while h, k, l are integers in 27 triads ranging from (0, 0, 0) to (8, 0, 0). A total of 816 independent points are tabulated, so arranged that the trigonometric sums for each of four points appear on each page. Values of $a_{h,k,l}(x, y, z)$ and $b_{h,k,l}(x, y, z)$ for all other points of the cubical lattice can then be derived by means of 38 formulas listed in the introduction. Use of the tables is facilitated by a detailed index of nearly four pages.

As stated in the introduction, these tables have been designed to simplify the computation of the electron density distribution in crystals on the basis of X-ray diffraction data. It is also stated that they can be used to compute the distribution of electrons with uncompensated spins and the potential distribution in crystals from appropriate neutron and electron diffraction data.

A foreword presents further details of the scientific background of these tables (including a bibliography of 15 items), and reveals that they were computed on the URAL and MINSK-2 computers and that in the past decade they have been in daily use in the X-Ray and Neutron Diffraction Laboratories of the Institute of Solid-State and Semiconductor Physics of the Belorussian Academy of Sciences.

J. W. W.