53[7].—R. W. Wyndrum, Jr. & E. S. Mitchell, Jr., *Values of the Complete Elliptic Integral K(k) when the Ratio K′/K is Large*, ms. of three typewritten pp. + two computer sheets deposited in UMT file.

In this manuscript table the authors have tabulated 16S approximations (in floating-point form) to the complete integrals $K(k)$, $K'(k)$ and the moduli k, k' for argument $K'/K = 2(0.2)20$. Double-precision floating-point arithmetic was employed in duplicate calculations performed on GE 635 and IBM 7094 systems. Because of rounding errors, the accuracy of the tabular results is guaranteed to only 14S.

The basic formulas used in the calculation, involving the Jacobi nome, q, and the well-known q-series for the Jacobi theta functions of zero, are given in the introduction.

The present unusual table constitutes a considerable extension of the closely related table of Eagle [1], to which the authors refer.

J. W. W.

1. A. Eagle, *The Elliptic Functions as They Should Be*, Galloway & Porter, Cambridge, 1958.

54[7].—M. I. Z͡hurina & L. N. Karmazina, *Tablit͡sy modifit͡sirovannyk͡h funkt͡siĭ Besseli͡a mnimogo indeksa $K_{i\tau}(x)$* (*Tables of the modified Bessel function of imaginary order $K_{i\tau}(x)$*), Computing Center, Acad. Sci. USSR, Moscow, 1967, xii + 341 pp., 27 cm. Price 3.18 rubles.

The modified Bessel function of the second kind of argument x and pure imaginary order $i\tau$ has the integral representation

$$K_{i\tau}(x) = \int_0^\infty \exp(-x \cosh u) \cos \tau u du , \qquad R(x) > 0 ,$$

which shows that it is real for $x > 0$ and τ real.

This function arises in many contexts. For example, values of it are required in the numerical evaluation of the integrals in the Kantorovich-Lebedev transform pairs

$$F(\tau) = \int_0^\infty G(x) K_{i\tau}(x) dx , \qquad 0 \leqq \tau < \infty ,$$

$$G(x) = \frac{2x}{\pi^2} \int_0^\infty \tau F(\tau) \sinh \pi\tau K_{i\tau}(x) d\tau , \qquad 0 < x < \infty .$$

Tables of $K_{i\tau}(x)$ are given in this volume to 7S for $x = 0.1(0.1)10.2$, $\tau = 0.01(0.01)10$.

The introduction contains a description of the methods of computing these tables and a detailed analysis for interpolation of the entries in both directions.

Tables of $K_{i\tau}(v)$, $v = e^x$, have been previously prepared by Morgan [1] and by Luke & Weissman [2].

Y. L. L.

1. S. P. Morgan, Jr., *Tables of Bessel Functions of Imaginary Order and Imaginary Argument*, California Institute of Technology Book Store, Pasadena, 1947. (See *MTAC*, v. 3, 1948–1949, pp. 105–107, RMT **504**.)

2. S. Luke & S. Weissman, *Bessel Functions of Imaginary Order and Imaginary Argument*, University of Maryland, Institute for Molecular Physics, Report DA-ARO(D)-31-124-G466 No. 1, College Park, Md., 1964. (See *Math. Comp.*, v. 19, 1965, pp. 343–344, RMT **50**.)