35[A, C].—W. E. MANSELL, edited by A. J. THOMPSON, *Tables of Natural and Common Logarithms to* 110 *Decimals*, Royal Society Mathematical Tables, Volume 8, Cambridge University Press, New York, 1964, xviii + 95 pp., 28 cm. Price $7.50.

Two of the four main tables here give the natural and common logarithms of the integers 1 to 1000 to 110 decimals. The other two are the radix tables:

$$\log 1.0^k x \quad \text{for} \quad x = 1(1)9 \quad \text{and} \quad k = 4(1)11,$$

again to both bases, e and 10, and again to 110D. There is a fifth table of 25 con stants: e, π, γ, etc., also to 110D.

The four main tables were computed by hand by William Ernest Mansell, a retired accountant, sometime during the 1930's. He left a provision in his will to make thier publication possible. The extensive editing was done by A. J. Thompson, who checked the tables by comparing sums with $\log_e n!$ and $\log_{10} n!$ for $n = 100$, 500 and 1000. The latter were computed by Stirling's formula, and are included in the table of constants.

The introduction indicates several (desk-computer) techniques of computing the logarithms of larger integers or irrational numbers by the use of these tables together with factor tables and the Taylor series. For example,

$$3\,141593 = 13 \cdot 437 \cdot 553 \cdot 10^{-6}$$

and

$$\pi = (1 - x)\, 3.141593/1.0^6 1 \cdot 1.0^7 1 \cdot 1.0^9 2 \cdot 1.0^{10} 6 \cdot 1.0^{11} 5,$$

where $x = 0.0^{12}79 \cdots$. From a few terms of the series for $\log (1 - x)$ one therefore obtains $\log \pi$ to 40D.

No previously published table has the same combination of range and accuracy, although even more accurate tables exist for smaller ranges. See [1] for a complete listing of such tables. It is clear, of course, that modern machines can easily surpass these very extensive hand computations of Mansell.

The four main tables are reproduced photographically, and while the printing is much better than that of many tables so reproduced, it does not have the elegance usually found in the Royal Society Tables.

D. S.

1. A. FLETCHER, J. C. P. MILLER, L. ROSENHEAD & L. J. COMRIE, *An Index of Mathematical Tables*, Addison-Wesley, Reading, Mass., 1962.

36[F].—M. L. STEIN & P. R. STEIN, *Tables of the Number of Binary Decompositions of All Even Numbers* $0 < 2n < 200{,}000$ *into Prime Numbers and Lucky Numbers*, Volumes I & II, Los Alamos Scientific Laboratory Report LA-3106, 1964. Vol. I, 442 pp.; Vol. II, 426 pp., 28 cm. Price $5.00 each. Available from Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C

The main table in Volume I (400 pages long) gives the number of solutions ν_{2n} of $2n = p_1 + p_2$, where p_1 and p_2 are primes, and $2n$ is an even number less than