

- 4 [H].—HENRY C. THACHER, JR., *Real Roots of the Equation $x \tan y + \tanh y = 0$* , ms. of six leaves deposited in UMT File.

The author describes in detail the procedure he followed in the preparation of these original manuscript tables, which give to six decimal places the first two real roots of the transcendental equation $x \tan y + \tanh y = 0$ for $x = 0(.05)1$ and for $\pm x^{-1} = 1(-.05)0$, respectively, and the first three real roots of that equation for $-x = 0(.05)1$, together with an auxiliary table to facilitate interpolation.

Such data are used, according to the author, in the application of one theory of the convective heat transfer between parallel plates. (Reference is made to A. F. Lietzke, *Theoretical and Experimental Investigation of Heat Transfer by Laminar Natural Convection between Parallel Plates*, NACA Report 1223, 1955.)

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- 5 [I, K, P].—B. M. BROWN, *The Mathematical Theory of Linear Systems*, John Wiley & Sons, Inc., New York, 1961, x + 267 p., 9 cm. Price \$8.00.

For its size this book is amazingly broad and thorough in its coverage of linear systems. Since the author is British, however, the manner of expression and sometimes the notation may seem strange to the American reader.

After a general discussion of linear differential equations, operational methods of solution are introduced. The unilateral Laplace transform is then used to solve equations with given initial conditions. Fourier series and integrals and the bilateral Laplace transform are then brought in, along with impulse, step, and ramp functions.

Linear systems are then discussed with the aid of block diagrams and simple physical examples, which are solved by various mathematical methods, including the weighting function. Feedback is then introduced, along with the stability criteria of Routh, Hurwitz, and Nyquist. The graphical methods using M -circles and root loci are summarized.

Statistical methods are used to introduce the concepts of correlation functions and spectral density, which are then applied to system optimization both with and without constraints.

After a short treatment of difference equations, the Z -transform is developed, followed by a treatment of sampling servos. Other topics treated include time-variant systems, multivariable systems, and interpolation systems.

The several appendices contain mathematical background materials and proofs. The book is probably too condensed to be a good college text, but it presents a good logical development and can serve as a valuable reference.

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- 6 [I, X].—D. S. MITRINOVIĆ & R. S. MITRINOVIĆ, "Sur une classe de nombres se rattachant aux nombres de Stirling," *Publ. Fac. Élect. Univ. Belgrade* (Série: Math. et Phys.), No. 60, 1961, 63 p. (French with Serbian summary.)

The two tables given in this publication are extensions of earlier ones by the same authors (see *Math. Comp.*, v. 15, 1961, p. 107; v. 16, 1962, p. 252).