56[L, X].—FRANÇOISE MICHAUD. *Étude sur les représentations approchées des solutions de l'équation de Mathieu*, Centre National de la Recherche Scientifique, Institut Blaise Pascal, Paris, 1965, 108 + 10 unnumbered pp., 27 cm.

This pamphlet summarizes some of the known results relating to Mathieu's equation, $y'' + [b - s\cos^2 x]y = 0$, and the corresponding modified equation. Its main part is devoted to the characteristic values corresponding to real parameters, s. Several methods of generating these numbers are reviewed. No new methods are developed, but the author has used Bazley's method for self-adjoint operators to compute some additional values and compare them with the National Bureau of Standards tabular values. Her comments indicate that for $s = 100$ and the 8th characteristic value, 12 "intermediate problems" yielded 6 significant figures, and this accuracy could not be improved by further calculations.

This reviewer does not agree with her comment that the method of finding the roots of the classical continued fraction is "very tedious." Compared with this method, Bazley's method involves much more work, and its use is justified only as an exercise, to give insight into his techniques. His methods are of profound importance in more difficult problems, where other means are not available. As an exercise, then, the results now given have value.

The author includes two FORTRAN II codes; one for computing the trigonometric coefficients by the "method of G. Blanch." This code is useful only in the region where none of the trigonometric coefficients pass through zero. For example, there would be division by zero when generating A_0/A_2 (as she does) if 8 or 10 significant digits were carried and $s = 85.19452484$, order $r = 2$. The second code relates to one phase of Bazley's technique.

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57[P, X].—V. E. BENEŠ, *Mathematical Theory of Connecting Networks and Telephone Traffic*, Volume 17, Academic Press, Inc., New York, 1965, xiv + 319 pp., 24 cm. Price $12.00.

Various combinatorial problems associated with communication networks are the principal concern of this research monograph. Special emphasis is given to the arithmetic for the synthesis and design of connecting networks (such as those occurring in the telephone system of a central office), to the classical statistical mechanics of traffic analysis, and to the routing of signals in complex networks. The author's "thermodynamic model" of traffic flow in communication *networks* is sufficiently plausible as to lead the reviewer to conjecture that a "quantum model" exists for a related communication *field*.

Except for minor details, seven of the eight chapters coincide nearly word-for-word with the author's publications in the *Bell System Technical Journal* over the past ten years. The remaining chapter gives results by C. Clos on nonblocking connecting networks for telephone systems. This book, unlike others which have been "pitchforked" together and published, does not suffer from discontinuities between chapters, although one occasionally finds technical terms used before they