Review
Reviewed Work(s): Mathematical Theory of Connecting Networks and Telephone Traffic. by V. E. Benes
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with continuous distributions. This leads to a certain amount of logical redundancy, but pays handsome dividends in readability and in keeping statistical motivation in the foreground. For example, the central limit theorem is proved for a number of special cases in part 1 and in a general form in part 2.

Anyone using this book, either as a textbook or for self study, might profitably supplement it with one of the standard texts on probability theory. The author does not usually state theorems separately, so they must be extracted from the body of the text; in fact, some of the hypotheses turn up in the footnotes.

The book contains more than the average number of misprints and inconsistencies of notation, and some of the references are rather incomplete. In spite of these difficulties the book is a valuable one and the minor irritations are more than outweighed by the author's insight into the basic problems of mathematical statistics.

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Mathematical Theory of Connecting Networks and Telephone Traffic. By V. E. Beneš. Academic Press, New York, 1965. xiv+319 pp. $12.00.

This work would best be titled "A Selection of Reprints on Telephone Networks," since except for Chapter 3, it is an almost word for word reprint of papers published in the *Bell Systems Technical Journal* [Chap. 1, vol. 41, p. 1201; Chap. 2, vol. 41, p. 1249; Chap. 4, vol. 32, p. 406; Chap. 5, vol. 36, p. 939; Chap. 6, vol. 40, p. 117; Chap. 7, vol. 42, p. 567; Chap. 8, vol. 42, p. 2795]. This is unfortunate in several ways, especially since it is never explicitly mentioned and since Chap. 4 is essentially the writing of C. Clos. Of more concern to the reader are the facts that: (1) it is a bit hard to understand the beginning without having read the middle (notations are not clearly introduced until well into the book, etc.), (2) it is divided into somewhat isolated portions, (3) it is very specialized and omits alternate approaches (as graph theory synthesis) and applications (as to air traffic routes). On the other hand the ideas treated are fascinating and represent extremely useful applications of somewhat advanced mathematics. For example a typical portion of the book, Chap. 3, is concerned with representation of telephone connecting networks through permutation groups; if appropriate group factorizations were on hand this would lead to economical synthesis of such networks.

The work represents what appears as a conscientious effort to combine engineering concepts with a rigorous mathematical treatment. As such it is fairly successful, but the reader does need considerable background in probability and group theory with some knowledge of topology being useful.

In summary, the work will most likely become a useful reference to workers in the telephone industry. Still, the lack of editorial effort is regrettable; with relatively little editing it could become a classic reference on very practical uses of semiabstract mathematics.

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Linear Equations and Matrices. By J. B. Johnston, G. B. Price and F. van Vleck. Addison-Wesley, Massachusetts, 1966. 308 pp. $8.50.

This is an elementary text with an emphasis on matrix algebra and its applications. Basic concepts are clearly defined and are accompanied by examples which give added meaning to the explanations. Considerable attention is given to computational procedures. Students interested in a good understanding of the mathematical development of the subject must pay close attention to the problems in the book.

The topics treated are: systems of linear equations, algorithms, flow charts, and matrices and their applications.

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