

course in probability at the pre-calculus level. Consequently, its attention is restricted to finite probability models, i.e., to models representing experiments with a finite number of outcomes. To facilitate numerical illustrations, a discussion (without proof) of the normal and Poisson approximations is included. The book contains over 400 problems, some of which provide simple exercises while others extend the ideas and results of the text, and instructors may obtain answer books by writing to the publisher.

Anyone facing the problem of having to teach an elementary course in probability at the pre-calculus level should definitely consider this book as a possible text, for it is a well written, rigorous treatment of probability restricted to finite models.

Miklos Csörgő, McGill University

Multidimensional Gaussian Distributions, by K.S. Miller. John Wiley and Sons, 1965. vii + 129 pages. \$ 9.50.

This is a book on the properties of the multivariate normal distributions and some of its various aspects. In the preface the author states that: "Our objective has been to present the basic facts concerning multidimensional Gaussian distributions in a concise, crisp, and we hope elegant form."

The author has done just that, and has done it in exactly the "concise, crisp" spirit. Hence, this book cannot in any sense be recommended as a text, but only as a reference. To statisticians, it will be somewhat disappointing, since no attention is given to sampling distribution theory from the multivariate normal. These are the negative aspects of the book.

On the positive side, however, one should note the following:

- (i) The clear definition of Rayleigh Distributions and their use to find the distribution of various functions of X_n , where X_n is an $(n \times 1)$ column vector having the n -variate normal distribution.
- (ii) The attention given to non-central univariate-distributions.
- (iii) The use of matrices and vectors including a well written introductory chapter on needed matrix theorems, quadratic forms, etc.
- (iv) A chapter giving applications to Gaussian noise problems.

Irwin Guttman, University of Wisconsin

Elements of the Theory of Probability, by Émile Borel. Translated by John E. Freund. Prentice-Hall, Inc., Englewood Cliffs, N.J. 1965. xiv + 178 pages.

In 1909 the author published a book, under the same title as this one, which is no longer in print. This new edition was originally pub-

lished as *Éléments de la Théorie des Probabilités*, by Émile Borel. (Copyright 1950 by Albin Michel) and is one of the volumes of the *Bibliothèque d'Éducation par la Science*. It contains several new chapters to account for some new developments.

Recently written Textbooks of probability concentrate mainly on the purely mathematical aspects of the theory and ignore its related philosophical problems. This book calls attention to and discusses these often controversial aspects of probability, thus shedding new light on the theory.

In the author's opinion the material in this book should be part of everyone's secondary education and may be considered as an introduction to his treatise (written with several collaborators) on the calculus of probabilities and its applications, which consists of 18 works, in 4 volumes, and a supplementary series of monographs on new developments of the theory.

Miklos Csörgő, McGill University

Linear Sequential Switching Circuits, edited by W.H. Kautz. Holden-Day, Inc., San Francisco, 1965. v + 234 pages. \$6.75.

The subclass of linear sequential circuits of the family of switching circuits is one of the most important from both the theoretical and practical viewpoints. From the theoretical side, it is only for this class that a highly developed theory exists, so that systematic analysis and synthesis can be carried out. The important practical applications are in the design of error-correcting and detecting codes which now figure prominently in many areas of telecommunications. The present volume is a collection of basic papers which have appeared in the past twelve years. The authors are D.A. Huffman (2 papers), B. Elspas, T.Hartmani M. Cohn, C.V. Srinivasan, N. Zierler (2 papers), T.E. Stern and B. Friedland (2 papers). Huffman's paper on the synthesis of linear sequential networks was published in *Information Theory*, the collection of papers presented at the London Symposium on Information Theory (1955). Zierler's papers appeared as a Lincoln Laboratory Technical Report (No. 95, 1955) and in the *S.I.A.M. Journal* (1959), and the paper by Srinivasan appeared in the *Journal of the Franklin Institute* (1962). The remaining papers were all published either in the *I.R.E. Transactions on Circuit Theory* or the *Transactions on Information Theory*. The recent trend towards books of carefully selected reprints on special topics is a commendable one. The present volume is a worthwhile addition, and should be of considerable value to any specialist in this field.

H. Kaufman, McGill University