judgment the numerous historical and emotional remarks of the author, like those on pages 39, 51, 63 and 75.

In spite of these differences of opinion, we do recommend this book. The general outline is satisfactory, and it is unique, as far as known to the reviewer, in presenting the general radical theory. Undoubtedly, it can be used in a course in ring theory for advanced students though no exercises are included. The book contains many simple and complicated examples which help to clarify the abstract theory.

S.A. Amitsur, Hebrew University

Mathematics for the physical sciences, by L. Schwartz. Hermann, Editeurs des Sciences et des Arts, Paris, and Addison-Wesley Publishing Company, Reading, Mass., 1966. 358 pages. $14.00.

The title of this book may be somewhat misleading in that it is neither a treatise on the methods of applied mathematics, nor a compendium of mathematical methods that should be known, or may be useful, to physicists. Rather, the emphasis is almost entirely on distribution theory and its application to physics. The book succeeds well in this, although it appears to be written more for the mathematician who may wish to learn something of the role of distribution theory in physics than for the physicist.

The first chapter is a review of various results on series and the Lebesque integral. Discussions of multiple integration and convergence of sequences of functions are included. The second chapter is concerned with elementary properties of distributions: their definition, examples, differentiation of distributions, and topology in distribution spaces. The convolution of distributions is defined in the third chapter and applied to the operational calculus, Volterra's integral equation (where the kernel is a function of the difference of its arguments) and electric circuit theory. The next three chapters are concerned with Fourier series, the Fourier Transform and the Laplace transform; the discussion is again strongly distribution theoretic. The chapter on Fourier series includes also the definition of Hilbert space and L^2 and a statement, and explanation of the significance, of the Riesz-Fischer theorem. The application of the Laplace transform to the operational calculus is also discussed. In Chapter 7 the preceding material is applied to the wave and heat-flow equations. The discussion of the wave equation is quite extensive, but that of the heat-flow equation is rather cursory; the latter, however, is discussed as an example in other parts of the book. The last two chapters are devoted to the gamma and Bessel functions.

Exercises are included at the end of each chapter. These exercises are both interesting and challenging.

The book is not without its flaws. The Hermite polynomials defined are different from the customary ones. The term spectral decomposition is used without apparent definition. There is no motivation for the inclusion of the last two chapters; the extensive development of the properties of Bessel functions does not mention that they are important in problems in cylindrical coordinates. I would also have liked to see references for the omitted proofs of the deeper theorems.

J.D. Talman, University of Western Ontario

Algebraic structure theory of sequential machines, by J. Hartmanis and R.E. Stearns. Prentice-Hall, Inc., Englewood Cliffs, N.J., 1966. viii + 211 pages. $11.50.

A recent and exciting new area of applied mathematics is the study of abstract models of digital computers. The authors, who have played a major role in this field, present here a unified and up-to-date account of a theory which has had a remarkably complete development between the years 1960 and 1965. The mathematical core of the book is the chapter on pair algebras (closely related to Galois connections between partially ordered sets); this theory is then applied to loop-free structures, state splitting, and feedback. The final chapter is an application of semigroup theory to capability problems about loop-free realizations. The book is strongly recommended not only to the worker in machine theory, but to anyone interested in examining a new and highly significant area of applied mathematics.

H. Kaufman, McGill University

An introduction to the foundations and fundamental concepts of mathematics, by H. Eves and C.V. Newsom. Holt, Rinehart and Winston, revised edition, 1965. xi + 398 pages. $9.95.

This book is unusual in its content, and it is unusually well written. The topics are well chosen and, although very few are carried beyond a very early introductory stage, this is done in such a way that the urge to read further works must be nearly irresistible.

Interesting historical snippets occur on almost every page. Occasionally they are distracting, yet their cumulative effect, regardless of irrelevant details, is a strongly effective reminder that mathematics is a human activity. The book has in this regard some of the characteristics of a Fireside Book of Mathematics - it is good for browsing in small doses. Among its more solid historical merits is a remarkable 5-page condensed history of the transition from Greek mathematics to modern mathematics (distilled from another work by one of the authors). As an outline on which to base extended reading this would be hard to beat.