use by the large number of research workers, who now require function approximation as an essential part of their mathematical equipment. The present author has set out to achieve this and has met with considerable success.

It is felt, however, that the book lacks the practical approach shown in a rival work, *The Approximation of Functions*, Volume 1: Linear theory (1964); Volume 2: Non-Linear theory (to appear) (Addison-Wesley) by J. R. Rice, although on the credit side, the material in the present volume is less heuristic than that in the work by J. R. Rice.

The book is concerned in the main with the approximation of continuous functions along the real axis and in the complex plane. There are two distinct chapters dealing with linear and non-linear approximation respectively.

The material in the first chapter, which covers about two-thirds of the book, is basic in approximation theory and consists in the main of Tchebycheff and polynomial approximation. The second chapter is concerned mainly with the recent research work by the author and others and covers non-linear Tchebycheff, rational, and exponential approximation.

ROTMAN, JOSEPH J., *The Theory of Groups: An Introduction* (Allyn and Bacon, Inc., 1965), xiii+305 pp., \$8.75.

The contents of this enjoyable book are as follows: Chapters 1 and 2: Isomorphism Theorems; 3: Cayley's Theorem and the simplicity of $A_n (n \neq 4)$; 4: Direct products, Basis theorems for finite Abelian groups and applications to modules and matrices, Remak-Krull-Schmidt Theorem; 5: Sylow Theorems; 6: Eight pages on Galois Theory, Solvable groups, Jordan-Hölder Theorem, P. Hall's Theorem on solvable groups of order ab, where $(a, b) = 1$, Nilpotent groups; 7: Automorphism groups, Extensions, Second Cohomology group; 8: Finite fields, Simplicity of the projective unimodular groups $PSL(m, K)$ when $m \geqslant 3$ or when $m = 2$ and K is a finite field of more than three elements, Two non-isomorphic simple groups of the same order; 9: Infinite Abelian groups, Basis theorems for finitely generated Abelian groups; 10: Hom and Ext functors; 11: Subgroup theorem for free groups, Free products with amalgamated subgroups; 12: Turing Machines, Proof of the existence of a finitely presented group with unsolvable word problem.

We have here essentially a simple basic text for beginners, together with a few selected more advanced topics. The exercises, except for some marked with an asterisk, form part of the logical development of the text. This makes the book rather unsuitable for private study, though students working under guidance will find this a good way to learn the subject.

This is above all a lively book with plenty of motivation and discussion. Thus, after the proof of the basis theorem for finite Abelian groups, we read:

> " We now have quite a bit of information about finite Abelian groups, but we still have not answered the basic question: If G and H are finite Abelian groups, when are they isomorphic? Since both G and H are direct sums of cyclic groups, your first guess is that $G \approx H$ if they have the same number of summands of each kind. There are two things wrong with this guess. First of all, since, e.g. $\sigma(6) \approx \sigma(3) \oplus \sigma(2)$, we had better require that G and H have the same number of *primary* summands of each kind. Our second objection is much more serious. How can we count summands at all; to do so would require a unique factorization theorem analogous to the fundamental theorem of arithmetic, where the analog of a prime number is a primary cyclic group. Such an analog does exist; it is called the fundamental theorem of finite Abelian groups, and it is this theorem we now discuss."

The material chosen by the author has been very well presented and the book can be highly recommended.

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