will acquire of many matters of fundamental importance in the study of global differential geometry. The chapter headings are as follows: I Elementary Differential Geometry, II Lie Groups and Lie Algebras, III Structure of Semisimple Lie Algebras, IV Symmetric Spaces, V Decomposition of Symmetric Spaces, VI Symmetric Spaces of the Noncompact Type, VII Symmetric Spaces of the Compact Type, VIII Hermitian Symmetric Spaces, IX On the Classification of Symmetric Spaces, X Functions on Symmetric Spaces.

D. MARTIN

HEADING, J., *Mathematics Problem Book I: Algebra and Complex Numbers* (Pergamon Press, 1964), 184 pp., 21s.

The stated intention of the author of this little paper-backed book is to supply a large number of examination-type problems suitable for first and second year students of Science and Engineering. The subject matter includes Determinants, Theory and Solution of Equations, Partial Fractions, Binomial, Exponential and related series, Convergence, Algebraic Curves, Inequalities, Hyperbolic Functions, Matrix Algebra, Complex Numbers, Conformal Transformations and the Cauchy-Riemann Equations.

Each chapter contains a short summary of results and methods together with a large number of problems. Answers are supplied. Students will no doubt find this book mainly of value as a source of problems for examination preparation.

D. S. MACNAB

TODD, JOHN, *Introduction to the Constructive Theory of Functions* (Basel, Switzerland: Birkhäuser Verlag, 1963), 127 pp., Fr. 27.50.

The author declares his objectives to be:

(i) to present to prospective mathematicians an account of some elegant but usually overlooked ideas from classical analysis;
(ii) to provide a carrier for some mild propaganda for numerical analysis; and
(iii) to put on record in a palatable context some basic formulas and properties of the classical orthogonal polynomials.

These objectives and the manner in which they are attained make this a timely and valuable contribution to mathematical literature in view of the intense interest which is generating in numerical analysis and the influence which it is having on the content of mathematical courses both at the undergraduate and postgraduate levels. The material, much of it extracted from original papers, is selected with the needs of the numerical analyst in mind. The more general theory is developed in the text with particular results contained in sets of problems which appear at the ends of the chapters and for which outline solutions are given at the end of the book. The presentation is concise, satisfying to the classical analyst yet should be comprehensible to prospective honours degree graduates, and if recommended as collateral reading would unify concepts which may appear in lecture courses in a variety of contexts.

The subject matter is essentially concerned with the approximate representation of functions in terms of simpler ones. This may be obscured by the title which has been adopted from the Russian school of mathematicians to whom much of the development of the subject is due. The chapter headings are: 1. Results from Algebra and Analysis: 2. The Theorems of Weierstrass: 3. The Chebyshev Theory: 4. The Theorems of the Markoffs: 5. Orthogonal Polynomials: 6. Interpolation and Interpolation Processes: 7. Bernoulli Polynomials: 8. Function Spaces: 9. Approximate Quadrature.

This book is the first of a new series of expository texts on numerical mathematics, The International series on Numerical Mathematics, and it augurs well for the series that it should be initiated so competently. The price is high in relation to size but the quality of production is good and the content and presentation are excellent.

JAMES FULTON