

BOOK REVIEW

Publishers are invited to send in their recent mathematical publications for reviewing. Reviews of books of mathematical interest are solicited from readers. Books or reviews should be sent to The Editor, Mathematical Medley, Department of Mathematics, University of Singapore, Singapore 10.

College Algebra by Louis Leithold. Macmillan, New York, 1975, xi + 527 pp., 4 tables.

This book tries to give students "an appreciation of mathematics as a logical science, and makes them understand that a mathematical system consists of axioms and definitions together with theorems that are proved by logical reasoning." Some idea of the ground covered can be obtained from the following list of contents : The real numbers ; Algebraic expressions ; Exponents and radicals ; Equations in one variable ; Equations in two variables ; Functions ; Exponential and logarithmic functions ; Systems of equations ; Inequalities ; Matrices and determinants ; Sequences, series and mathematical **induction** ; **Permutations, combinations** and the binomial theorem ; Complex numbers ; Polynomial functions and the theory of polynomial equations.

At the end of the book there are tables of squares, square roots, cubes, cube roots, common logarithms, exponential functions, & natural logarithms. Answers to odd-numbered exercises are given; and there is an index.

Anyone who has not heard of sets and subsets in "modern maths" will find Chapter 1 helpful. The explanation is clear and the worked examples are sufficient. Chapter 2 to 5 will be suitable for secondary one to four students.

They are "plain sailing" Chapters. If one likes to know the answer to "What is a function?" or "What is the difference between a function & its inverse?" then one must read Chapter 6.

Students doing G.C.E.F. "O" Level Mathematics (Syllabus C) may like to learn more about linear programming by reading Chapter 9.

The Chapter on matrices ends with fourteen problems like :-

"Use matrices to find the solution set of the system

$$2x + y - 3z = 0$$

$$3x + 2y - 4z = 2$$

$$x - y - 3z = -6$$

whereas Chapter 10 says "Use Cramer's rule to solve the same system."

Arithmetical & geometrical progressions are dealt with in Chapter 11.

Chapter 13 ends with "Geometric representation of complex numbers."

"Descartes' rule of signs" and "Solving algebraic equations by Horner's method" are clearly explained in Chapter 14.

On the whole it is a good book on elementary algebra with plenty of worked numerical examples. It is a beautifully printed book. The graphs are printed in red and the axes in black. Although algebra is not taught in our schools as a single subject, this book contains a number of relevant topics. I would recommend it for the school library.

Chan Sing Chun

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ANNOUNCEMENT

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