

BOOK REVIEWS

"Puzzles in Math & Logic" by Aaron J. Friedland Published by Dover, \$1.80

This is a new collection of 100 puzzles requiring very little knowledge of algebra or geometry. Most of them seem to be genuinely new (I have never seen them before) and so will be welcomed by those people who already have several books of puzzles and are looking for a new one. Some of the puzzles have a delightfully surprising twist. For example, there is a question on whether 3 aces and two kings or 3 aces and two 6's is a better poker hand (the answer is not obvious!) and also two chess questions on mating in one move.

"Puzzles and Curious Problems" and "More Puzzles and Curious Problems"
by Henry Ernest Dudeney Published by Fontana, \$0.85 and \$0.95 respectively

Unlike the previous book, these two books probably do contain many problems you have seen before, simply because most collections of problems contain some of Dudeney's. However, these books are a collection from the "puzzle king" himself and edited by Martin Gardner. If these two names are not enough to recommend the book, then the fact that each book contains over 250 Dudeney originals should. The standard of the puzzles ranges from easy arithmetical problems to highly complex problems. In my opinion, these books are a collector's item as well as a rich source of puzzles.

"Mathematics, Magic and Mystery" by Martin Gardner Published by Dover, \$1.95

Anything by Martin Gardner is good because he presents not only interesting facts but also the ideas behind them. So it is with this book, in which he describes many magical tricks which depend on mathematics, variations of those tricks, and the mathematical principles underlying them. The book includes card tricks, magic with everyday items, geometric vanishing tricks, and tricks depending on topology or properties of numbers. In all, there are 115 magical tricks to try out on your friends.

“How to Solve It” by G. Polya

A Doubleday Anchor Book, \$1.90

Although this book is nearly thirty years old, it is still extremely useful. The title tells you what it is all about: how to solve problems in mathematics. Naturally, it does not list all mathematical problems with their solutions but rather it presents techniques for analyzing a general problem and for inventing tricks for solving it. In the first section of the book, the techniques are outlined and illustrated with examples; in the second section, an imaginary teacher answers all your questions; the third section is a lengthy dictionary (or rather, an encyclopaedia) of terms and techniques used in solving problems; finally, the book ends with 20 problems for you to practise on (with hints and solutions). Don't buy it unless you expect to be solving problems in the future.

“Numbers Without End” by C. Lanczos

Published by Oliver and Boyd, \$1.20

What is a number; This is the basic question that Professor Lanczos seeks to answer in this book. After discussing the concepts of counting, measuring and “grouping”, he introduces the reader to the decimal system (and other systems throughout the world) and integers with many of their fascinating properties. He then takes the reader for a tour through history, meeting in turn the negative numbers, the fractions, irrational numbers, complex numbers and hyper-complex numbers. This naturally leads on to the problem of what infinity is. He concludes with what to my mind is the unique part of the book: short biographies of men who were responsible for some of the numbers. Although parts of the book are outside even the level 1 syllabus, I think the book is quite readable for keener students of all years.

R. James



Factors and Factors

Find two numbers m and n such that m divides n , $m + 1$ divides $n + 1$, $m + 2$ divides $n + 2$, . . . , $m + 10$ divides $n + 10$.

Answer on page 36