BOOK REVIEWS

<u>Mathematical Puzzles and Diversions</u> and
<u>More Mathematical Puzzles and Diversions</u> by Martin Gardner.
Published by Penguin Books, $0.85 each.

Martin Gardner has been the author of the section "Mathematical Games" in Scientific American since 1957, where he has written numerous interesting and exciting articles on fascinating topics in mathematics. These two books are collections of some of the best of those articles. In the first book, Mr Gardner flexes hexaflexagons, plays 3-dimensional Ticktacktoe, twists Moebius strips, introduces the new game of Hex, and discusses other topics like Magic, Polyominoes and Tac Tix. In the second book, he flips Tetraflexagons, builds models with the Soma cube, tangrams and paper-folding (Origami), wanders through mazes and magic squares and introduces us to the fictional James Hugh Riley with his "Spot-the-spot" and generalized Ham Sandwich Theorem.

As you can see, Martin Gardner is a fascinating character and any of his books make good reading.

<u>Riddles in Mathematics</u> by Eugene P. Northrop.
Published by Penguin Books, $0.85.

Can you prove that $45^{\circ} = 60^{\circ}$, or that there were a million times as many people on earth 600 years ago, or construct a bottle with no inside, or count all the rational numbers? These and many other paradoxes are dealt with in this interesting and thought-provoking book. Some of them are very simple such as the house with all sides facing South – and some are difficult such as "the smallest number not describable in less than eleven words" which is describable in ten words. But all of them are challenging and will make you think!

<u>A New Look at Arithmetic</u> by Irving Adler.
Published by Signet Science Library, $0.90.

This book is all about numbers: natural numbers, integers, rational numbers and real numbers. Mr Adler answers two very important questions which high school students often ignore: What do we mean by a "number" and why do our methods of adding, subtracting, multiplying and dividing work? He also looks at the numbers as points on a line and the application of numbers to things around us. Although the book makes easy reading, some parts of it are quite challenging. For example, do you know that two increases of 10% is an increase of 21%, and not 20%?

The New Mathematics by Irving Adler.
Published by Signet Science Library, $1.00.

This book is a little more advanced than the one above, but still extremely readable. Using numbers, Mr Adler introduces and explains many terms from modern mathematics. By doing arithmetic without numbers, he introduces the reader to the groups, rings and fields of modern Algebra and by looking at the number line he investigates the ideas of neighborhoods, limits and open sets in topology and by going to two-dimensional numbers, he invents complex numbers, vectors and matrices. This is good background to the Level I course in fifth and sixth form.

101 Brain Puzzlers by E.R. Emmett.
Published by MacMillan, $5.10.

As you can see, this book is a little expensive (it is still in a hard cover). However it is still a very good and interesting collection of puzzles ranging from completing the Soccer results to Cross-number puzzles and some puzzles in logic.

The book contains some interesting characters (such as the Brainstorm Brothers and Gongle, Hongle and Ian of Salamanca Street) and competitions (such as the Deception test). I will welcome the appearance of this book in paperback.

R. James.

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"Eight"

Complete the following long division: (Answer on page 40)

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