Preface

The primary aim of **MATHS Problem-Solving Strategies Books 1-6** is to help pupils develop their mathematical thinking skills and expand their knowledge of mathematical concepts and formulae. Each book provides ample practice on various routine and practical mathematical problems.

The topics selected for each level are based on the latest syllabus. Examples of common word problems are given followed by the step-by-step working to show the process of problem solving. In **MATHS Problem-Solving Strategies Books 3-6**, notes are included. These notes highlight important and relevant mathematical concepts and formulae.

Challenging problems, which are indicated with asterisks, are also found in each topic. These challenge pupils to master their skill in higher-order thinking. Revision papers provide an overall assessment of the pupils' progress in learning these mathematical concepts.

Pupils will find this book useful in preparing for their examinations.

Francis Teo

Contents

Whole Numbers (1)

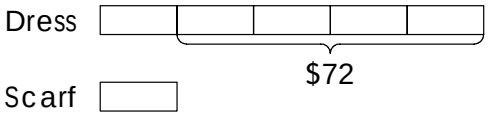
NOTES

Order Of Operation

1. Do the operations within the brackets first.
2. Then do the multiplication and division from left to right.
3. Finally, do the addition and subtraction from left to right.

Example 1

A dress costs 5 times as much as a scarf. If the dress costs $72 more than the scarf, find the cost of the dress.



4 units $\rightarrow$ \$72

$$\begin{array}{r} 18 \\ 4\overline{)72} \\ -4 \\ \hline 32 \\ -32 \\ \hline 0 \end{array}$$

1 unit $\rightarrow$ \$72 ÷ 4 = \$18

5 units $\rightarrow$ 5 × \$18 = \$90

$$\begin{array}{r} 18 \\ \times\ 5 \\ \hline 90 \end{array}$$

The cost of the dress is \$90.

Example 2

Paul has $6 worth of five-cent coins and twenty-cent coins. He has twice as many five-cent coins as twenty-cent coins. How many five-cent coins does Paul have?

One set { 2 five-cent coins
1 twenty-cent coins

Value of one set = (2 × 5¢) + (1 × 20¢)
= 30¢

$6 = 600¢
Number of sets = 600¢ ÷ 30¢
= 20

$$\begin{array}{r} 20 \\ 30\overline{)600} \\ -\ 60 \\ \hline 00 \\ -\ 0 \\ \hline 0 \end{array}$$

Number of five-cent coins = 20 × 2
= 40

Paul has 40 five-cent coins.

PRACTICE

1. A video recorder costs $250 less than a television set. If the television set costs 3 times as much as the video recorder, find the cost of the television set.

2. A handbag costs 5 times as much as a pair of shoes. If the total cost of both items is $234, how much does the handbag cost?

3. A durian is 4 times as heavy as a papaya. If the durian is heavier than the papaya by 1 kg 260 g, find the mass of the two fruits.

*4. Mary took part in a quiz. For every correct answer, she was awarded 3 marks. For every wrong answer, 2 marks were deducted. Altogether, she answered 50 questions and scored 95 marks. How many correct answers did Mary provide?

*5. There were 40 pupils in a class. Each girl placed 5 sweets on the teacher's desk while each boy removed 2 sweets from the teacher's desk. In the end, there were 81 sweets on the teacher's desk. How many girls were there in the class?

6. Twelve years ago, Mandy's father was 5 times as old as her. Mandy's father was 28 years older than her. How old is Mandy now?