

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

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Whole Numbers

NOTES

Order of operations

Step 1 : Do within the brackets.

Step 2 : Do multiplication and division.

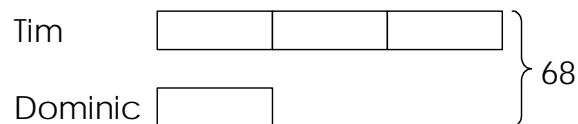
Step 3 : Do addition and subtraction.

Example 1

Tim has 24 balloons and Dominic has 44 balloons. How many balloons must Dominic give to Tim so that Tim will have 3 times as many balloons as Dominic?

$$24 + 44 = 68$$

Tim and Dominic have 68 balloons.



$$4 \text{ units} \rightarrow 68$$

$$1 \text{ unit} \rightarrow 68 \div 4 = 17$$

Comparing Dominic's balloons:

$$44 - 17 = 27$$

Dominic must give 27 balloons to Tim so that Tim will have 3 times as many balloons as he.

Example 2

Simplify $(3 + 4) \times 5 + 16 \div (2 \times 4)$

$$\begin{aligned}(3 + 4) \times 5 + 16 \div (2 \times 4) &= 7 \times 5 + 16 \div 8 \\ &= 35 + 2 \\ &= 37\end{aligned}$$

The answer is 37.

- *3. A packet of sweets can be shared equally among 3 boys or 5 girls. If there are between 40 and 50 sweets in the packet, how many sweets are there?

4. Find the value of $(40 - 16) \div 8 + 3 \times (4 + 5 \times 2)$.

5. Lena, Jenny and Kim share 155 hair clips. Lena gets 3 times as many hair clips as Jenny while Kim gets 29 more hair clips than Lena. How many hair clips does Kim get?
6. The average weight of Georgina, Zoey and Nicole is 39 kg. The average weight of Georgina and Zoey is 43 kg. Find Nicole's weight.