

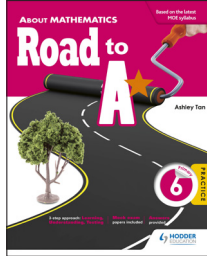
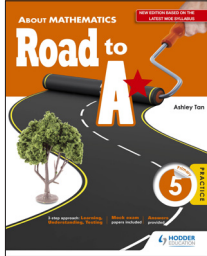
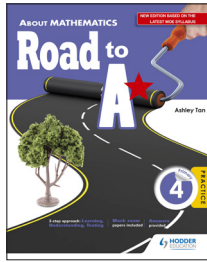
# SINGAPORE PRIMARY MATHEMATICS

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## About Mathematics: Road to A Star

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**TOPIC 13** Time

**1 Telling Time and Duration**

**Learning**

(a) Mr Lim goes to the market at 6.45 am or  minutes to 7 o'clock in the morning. What is the missing number?

From the clock face, we can see that 6.45 am is 15 minutes to 7 am.  
The answer is 15.

(b) A car left Singapore at 7.15 am and reached Cameron Highlands at 1.35 pm. How long did the car journey take?

There are 6 h between 7.15 am and 1.15 pm.

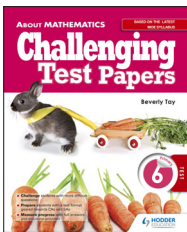
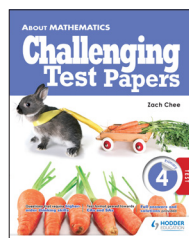
There are 20 min between 1.15 pm and 1.35 pm.

$6\text{ h} + 20\text{ min} = 6\text{ h } 20\text{ min}$   
 The car journey took **6 h 20 min**.

(c) HuiMin spent 6 h 40 min at a fun fair. She left the fun fair at 4.30 pm. At what time did she arrive at the fun fair?

6 h before 4.30 pm is 10.30 am.  
 30 min before 10.30 am is 10 am.  
 10 min before 10 am is 9.50 am.  
 She arrived at the fun fair at **9.50 am**.

Taken from **About Mathematics: Road To A\* Primary 3**



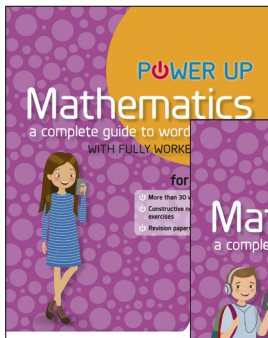
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## About Mathematics: Challenging Test Papers

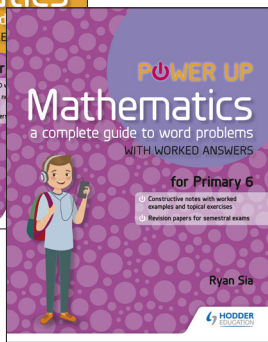
### Primary 3 - Primary 6

Reinforce knowledge and understanding of topics covered with revision and practice for Continual and Semestrial Assessments, with differentiated questions based on the latest Primary Mathematics Syllabus issued by the Ministry of Education, Singapore.

- Use with ease alongside class teaching, with topics arranged to match the school assessment calendar.
- Progress evenly with new topics added to each test paper cumulatively.
- Ensure all question types are covered with multiple-choice, short-answer and long-answer questions.



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# Power Up Mathematics: A Complete Guide to Word Problems

## Primary 5 and 6

Improve confidence when approaching word problems with practice questions for every unit, worked examples and teaching notes and tips, based on the latest Ministry of Education syllabus.

- Encourage independent study with teaching notes and worked examples for each unit, that contain tips and further explanations.
- Reinforce learning and test key skills with unit practice questions and two Semestral Assessment papers.
- Support students of all abilities with differentiated questions - basic, Intermediate and Advanced.
- Consolidate knowledge with fully worked answers provided at the end of the book.
- Improve confidence with varied worked examples that focus on solving word problems.

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## 2 FRACTIONS

**Learning Objectives:**

- Finding the number of objects in the fraction of a set
- Solving word problems with fractions involving addition, subtraction and multiplication

**2.1 Finding the number of objects in the fraction of a set**

**WORKED EXAMPLE 1**

There are 20 coloured balls in a box.  $\frac{2}{5}$  of them are red and the rest are green. How many coloured balls are green?

**Solution**

20 coloured balls

5 units  $\rightarrow$  20  
1 unit  $\rightarrow$  20  $\div$  5  
 $=$  4  
3 units  $\rightarrow$  3  $\times$  4  
 $=$  12  
or  
 $\frac{3}{5} \times 20 = 12$

12 coloured balls are green.

**Note:** We can choose to reduce the fraction through the cancellation method or use model drawing to solve questions on fractions of a set. In this question, the 5 units will represent 20 coloured balls.

**2.2 Solving word problems with fractions involving addition, subtraction and multiplication**

Rules of addition and subtraction of fractions:

1. Change both fractions into similar denominators before adding or subtracting.
2. When changing to equivalent fractions, the same number must be multiplied to both the numerator and denominator.

**WORKED EXAMPLE 2**

Jack had some balloons.  $\frac{1}{3}$  of the balloons were green and  $\frac{1}{4}$  of the balloons were yellow. The rest were red balloons. Jack had 72 balloons altogether, how many red balloons did he have?

**Solution**

$$\frac{1}{3} + \frac{1}{4} = \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

$$1 - \frac{7}{12} = \frac{5}{12}$$

$$\frac{5}{12} \times 72 = 30$$

or

$$\frac{1}{3} \times 72 = 24$$

$$\frac{1}{4} \times 72 = 18$$

$$72 - 24 - 18 = 30$$

He had 30 red balloons.

Taken from **Power Up Mathematics A Complete Guide to Word Problems Primary 5**

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## 2 PERCENTAGE

**Learning Objectives:**

- Finding whole from a given part or percentage
- Finding percentage increase and percentage decrease

**2.1 Finding whole from a given part or percentage**

The percentage of a total quantity is always proportional to 100%. By using percentages to proportionally represent the given quantity, required quantity in the questions can be calculated.

**WORKED EXAMPLE 1**

There were 18 girls and 12 boys at a museum. Express the number of girls as a percentage of the total number of children at the museum.

**Solution**

$$\frac{18 + 12}{30} = \frac{30}{30} = 100\%$$

**Note:** When we calculate percentage, we always form the fraction first based on the given set for the question before multiplying 100% to the fraction. We can reduce the fraction to the lowest term before we proceed to multiply the percentage.

60% of the total number of children at the museum are girls.

**WORKED EXAMPLE 2**

40% of the people in the library are adults. If there are 100 adults in the library, how many people are there altogether?

**Solution**

$$40\% \rightarrow 100$$

$$1\% \rightarrow 100 \div 40$$

$$100\% \rightarrow 2.5 \times 100 = 250$$

There are 250 people in the library altogether.

**Note:** The total quantity of any items, people or objects given in the question is equal to 100%. When we compare percentage and quantity, we can form mathematical equations by using the percentage units and quantity to solve challenging word problems.

**2.2 Finding percentage increase and percentage decrease**

We can also calculate the percentage increase or decrease by finding the values of the given percentages in the question. Discount means that the cost of the product becomes cheaper. Having a percentage more than 100% will mean that the amount has increased.

**WORKED EXAMPLE 1**

Cabriel wanted to buy a shirt which cost \$18. There was a 20% discount sale storewide. How much did he pay after the discount?

**Solution**

<b>Method 1</b>	<b>Method 2</b>
100% $\rightarrow$ 20% $\rightarrow$ 80%	100% $\rightarrow$ \$18
100% $\rightarrow$ \$18	20% $\rightarrow$ \$18 $\div$ 5
80% $\rightarrow$ \$18 $\times$ 80	$\rightarrow$ \$3.60
$\rightarrow$ \$14.40	\$18 $-$ \$3.60 $\rightarrow$ \$14.40
He paid \$14.40.	He paid \$14.40.

**Note:** When we calculate percentage, we can also form quick calculation by finding the proportion of the percentages. Notice that 20% is  $\frac{1}{5}$  of 100%. We can then divide the quantity by 5 so that we can find the answer. (\$18  $\div$  5  $=$  \$3.60)

**WORKED EXAMPLE 2**

The selling price of a car was \$80 000 last year. This year, it costs \$92 000. Find the percentage increase of the selling price of car?

**Solution**

$$\frac{92\,000 - 80\,000}{80\,000} = \frac{12\,000}{80\,000} = 15\%$$

The percentage increase was 15%.

**Note:** To find the percentage increase and decrease increase or decrease change  $\div$  original amount  $\times$  100%. When we calculate percentage, we need to find the difference in quantity before using it to form a fraction of the original amount to find the percentage.

Taken from **Power Up Mathematics A Complete Guide to Word Problems Primary 6**

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