THIRD SPACE LEARNING

Specialist 1-to-1 maths interventions and curriculum resources

Rapid Reasoning

Year 6 | Weeks 25–36

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Rapid Reasoning

Year 6 | Week 28

This week, the questions within *Rapid Reasoning* continue to focus on statistics.

The following new Year 6 objective is a particular focus this week:

- calculating and interpret the mean as an average.

As with previous weeks, other content from throughout Key Stage 2, which the children have met in previous weeks of *Rapid Reasoning*, will also feature this week.

Q1 There are 50 questions in a spelling test.

Here are some children's scores.

Name	Score (out of 50)
Eva	30
Kieron	35
Joel	45
Mia	25

a What **fraction** of the test did Eva get right? Give your answer in its simplest form.

$\frac{\square}{\square}$ of the test

1 mark

b What **percentage** of the test did Joel get right?

$\square$ of the test

1 mark

Q2 Extra buckets of special fried chicken cost £14.75 each.

Large portions of chips cost £1.95 each.

Six friends buy 3 extra-large buckets of chicken and 5 large portions of chips.

They split the cost equally.

How much does **each** friend pay?

£

2 marks

Q3 Melanie saves £3.50 each week.

How much has she saved after 19 weeks?

£ _____

1 mark

Q1 There are 50 questions in a spelling test.

Here are some children's scores.

Name	Score (out of 50)
Eva	30
Kieron	35
Joel	45
Mia	25

a What **fraction** of the test did Eva get right? Give your answer in its simplest form.

$\frac{3}{5}$ of the test

1 mark

b What **percentage** of the test did Joel get right?

90% of the test

1 mark

Q2 Extra buckets of special fried chicken cost £14.75 each.

Large portions of chips cost £1.95 each.

Six friends buy 3 extra-large buckets of chicken and 5 large portions of chips.

They split the cost equally.

How much does **each** friend pay?

£ 9.00

2 marks

Q3 Melanie saves £3.50 each week.

How much has she saved after 19 weeks?

£ 66.50

1 mark

	Requirement	Mark	Additional guidance
Q1a	$\frac{3}{5}$	1	
Q1b	90%	1	
Q2	Award **TWO** marks for the correct answer of £9.00 Award **ONE** mark for either: £9.0, £9.0p **OR** evidence of a complete method with no more than one arithmetic error, for example: 14.75 × 3 = £44.25 £1.95 × 5 = £9.75 £9.75 + £44.25 = £54 £54 ÷ 6 = wrong answer	2	Also accept £9.00p and £9 Accept any feasible method for the award of **ONE** mark. Arithmetic error can occur at any stage of the method.
Q3	£66.50	1	

What are examiners looking for?

Q1 There are 50 questions in a spelling test.

Here are some children's scores.

Name	Score (out of 50)
Eva	30
Kieron	35
Joel	45
Mia	25

a What **fraction** of the test did Eva get right? Give your answer in its simplest form.

$\frac{3}{5}$ of the test

1 mark

b What **percentage** of the test did Joel get right?

90% of the test

1 mark

Why are we asking this question?

This question is designed to assess children's understanding of fractions and percentages and the equivalence between them.

What common errors do we expect to see?

Some children may give the answer for part a as $\frac{30}{50}$, not giving their answer in the simplest form.

Some children may give the answer to part b as 45%.

How to encourage children to solve this question

For part a, encourage children to record Eva's score as a fraction with a denominator of 50: $\frac{30}{50}$.

Draw children's attention to the fact that the question asks for their answer to be in its simplest from. Remind children that to simplify the fraction they need to identify a common factor for both the numerator and denominator. Identify that 10 is a common factor of 30 and 50, and therefore that $\frac{30}{50}$ is the same as $\frac{3}{5}$.

For part b, encourage children to record Joel's score as a fraction: $\frac{45}{50}$.

Remind children that percentages are out of 100 and encourage them to write $\frac{45}{50}$ as an equivalent fraction with 100 as a denominator: $\frac{90}{100}$. Children should then be able to identify that $\frac{90}{100}$ is the same as 90%.

Q1 Match each conversion with the method you would use to convert.

Convert mm into cm	× 100
	÷ 1,000
Convert kg into g	× 10
	÷ 10
Convert m into km	× 1,000

2 marks

Q2 Write in the two missing digits

$\square 1 - 2 \square = 34$

1 mark

Q3 Complete the missing digits in this subtraction.

$$\begin{array}{r} 7\ 6\ 8\ 5 \\ -\ 4\ \square\ 7\ 5 \\ \hline \square\ 8\ 1\ \square \end{array}$$

2 marks

Q1 Match each conversion with the method you would use to convert.

2 marks

Q2 Write in the two missing digits

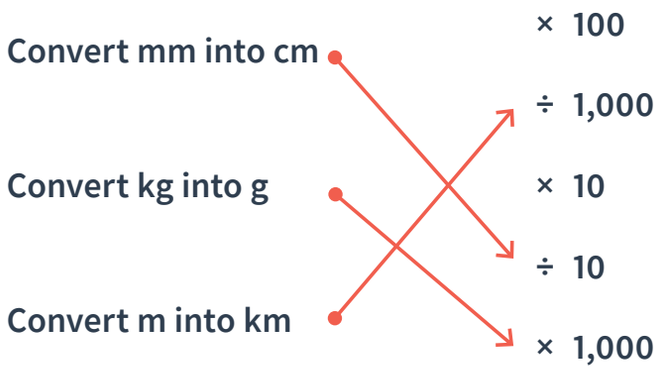
$$\boxed{6}1 - 2\boxed{7} = 34$$

1 mark

Q3 Complete the missing digits in this subtraction.

$$\begin{array}{r} 7\,6\,8\,5 \\ -\,4\,\boxed{8}\,7\,5 \\ \hline \boxed{2}\,8\,1\,\boxed{0} \end{array}$$

2 marks

	Requirement	Mark	Additional guidance
Q1	Award **TWO** marks for all 3 correctly matched, as below:  Award **ONE** mark for 2 correctly matched.	2	
Q2	6 1 − 2 7 = 34	1	
Q3	Award **TWO** marks for all three correct digits. Award **ONE** mark for any two correct digits. 7 6 8 5 − 4 8 7 5 2 8 1 0	2	

Q1 Write the symbols >, < or = to compare each pair of measurements.

7.4km ☐ 7km + 40m

2,350ml ☐ $2\frac{3}{4}$ litres

21kg + 5g ☐ 26,000g

2 marks

Q2 A and B are numbers in the ratio 4:5.

A is 60.

There are two possible values for B.

What are the **TWO** possible values?

☐ and ☐

2 marks

Q3 The safety rules at a swimming pool/rock-climbing centre say that there must be 1 adult for every 4 children.

Mike wants to have 19 children at his swimming party.

How many adults should there be?

☐ adults

1 mark

Q1 Write the symbols >, < or = to compare each pair of measurements.

7.4km	>	7km + 40m
2,350ml	<	$2\frac{3}{4}$ litres
21kg + 5g	<	26,000g

2 marks

Q2 A and B are numbers in the ratio 4:5.

A is 60.

There are two possible values for B.

What are the **TWO** possible values?

75 and 48

2 marks

Q3 The safety rules at a swimming pool/rock-climbing centre say that there must be 1 adult for every 4 children.

Mike wants to have 19 children at his swimming party.

How many adults should there be?

5 adults

1 mark

	Requirement	Mark	Additional guidance
Q1	7.4km [>] 7km + 40m 2,350ml [<] $2\frac{3}{4}$ litres 21kg + 5g [<] 26,000g Award **TWO** marks for all correct symbols. Award **ONE** mark for any two correct symbols.	2	
Q2	75 and 48 (can be given in either order) **BOTH** numbers need to be correct for the award of the mark.	2	
Q3	5 adults	1	

Q1 A number is multiplied by 1,000.
The answer is 854.

What is the original number?

1 mark

Q2 Mya says, "I know that $\frac{91}{100}$ written as a decimal is equal to 0.91.

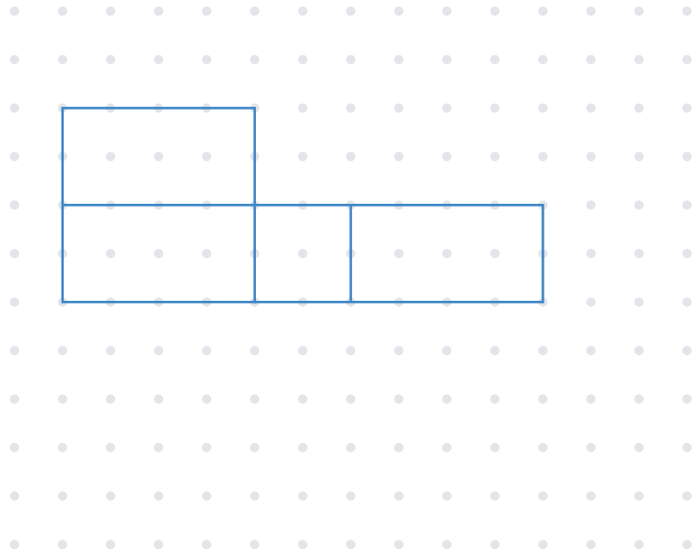
So, $\frac{7}{100}$ written as a decimal must be equal to 0.7."

Is Mia correct? **YES / NO**

Explain your answer.

1 mark

Q3



Draw two more faces to complete the net of a cuboid.

1 mark

Q1 A number is multiplied by 1,000.
The answer is 854.

What is the original number?

0.854

1 mark

Q2 Mya says, "I know that $\frac{91}{100}$ written as a decimal is equal to 0.91.

So, $\frac{7}{100}$ written as a decimal must be equal to 0.7."

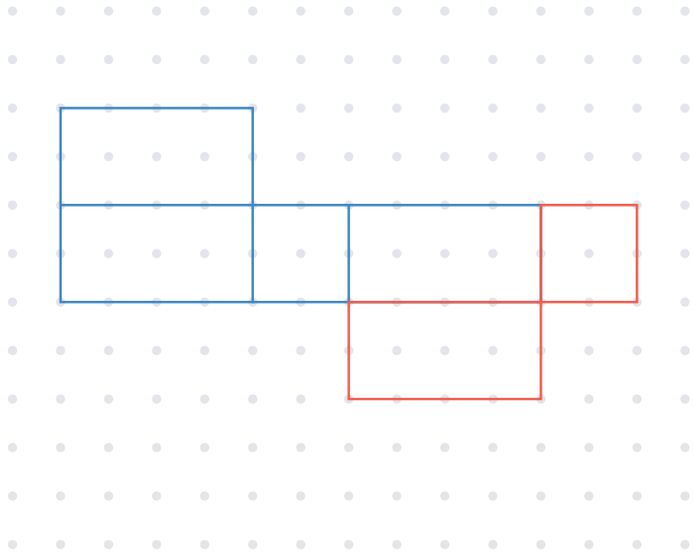
Is Mia correct? **YES** / **NO**

Explain your answer.

See mark scheme for example

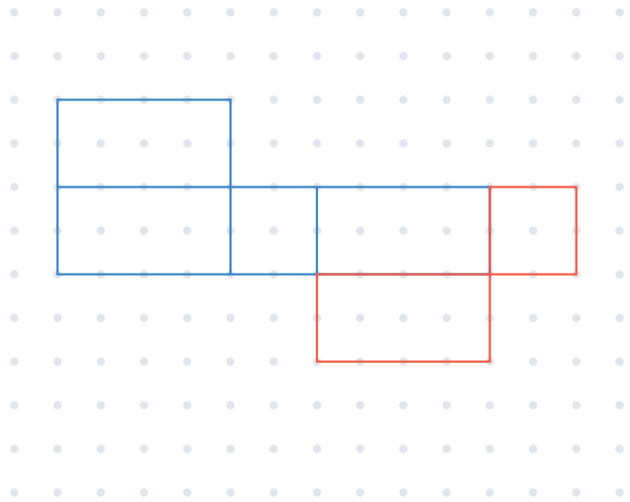
1 mark

Q3

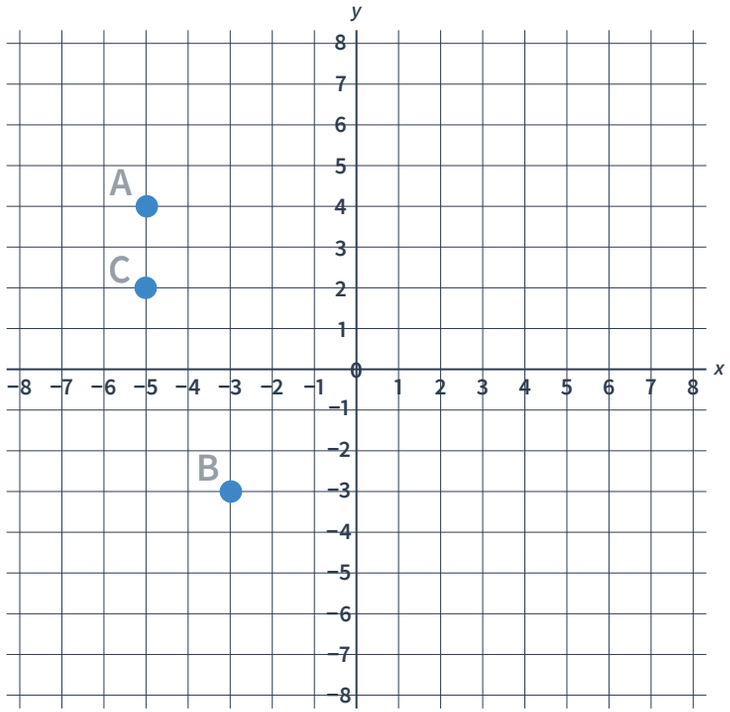


Draw two more faces to complete the net of a cuboid.

1 mark

	Requirement	Mark	Additional guidance
Q1	0.854	1	
Q2	No circled and any explanation that explains that $\frac{7}{100}$ should be written as 0.07 **OR** that 0.7 is the same as to $\frac{70}{100}$. Appropriate explanations may include the following: $\frac{7}{100}$ means that the 7 needs to be written in the hundredths place (0.07) 0.7 shows $\frac{7}{10}$, not $\frac{7}{100}$	1	
Q3	Two faces (one square, one rectangular) drawn so that they would complete a cuboid. For example: 	1	

Q1 Look at this coordinate grid.



What are the coordinates of points A and B and C?

Point A = (☐ , ☐)

Point B = (☐ , ☐)

Point C = (☐ , ☐)

3 marks

Q2 $\frac{1}{8}$ of a school are absent from school.

What **percentage** of children are absent?

☐ %

1 mark

Q3 Two decimal numbers add together to make 3.05.

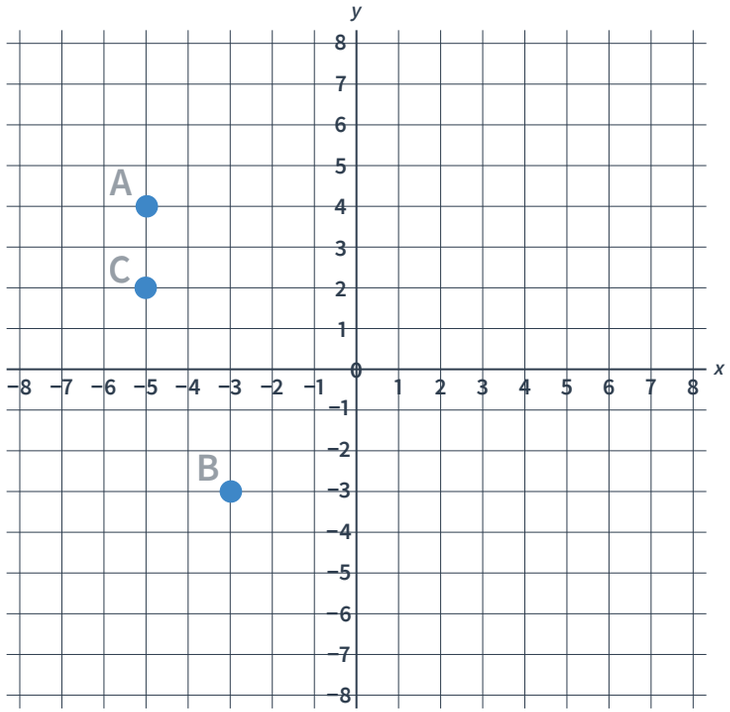
One number is 2.005.

What is the other number?

☐

1 mark

Q1 Look at this coordinate grid.



What are the coordinates of points A and B and C?

Point A = (−5 , 4)

Point B = (−3 , −3)

Point C = (−5 , 2)

3 marks

Q2 $\frac{1}{8}$ of a school are absent from school.

What **percentage** of children are absent?

12.5 %

1 mark

Q3 Two decimal numbers add together to make 3.05.

One number is 2.005.

What is the other number?

1.045

1 mark

	Requirement	Mark	Additional guidance
Q1	Award **ONE** mark for each correctly given set of coordinates. A (−5 , 4) B (−3 , −3) C (−5 , 2)	3	Do **NOT** accept reversals. Do **NOT** accept positive numbers given where negative numbers are needed and vice versa.
Q2	12.5%	1	
Q3	1.045	1	

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