

Year 8

Mathematics

Higher: No calculator allowed

Time allowed: 45 minutes

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
Teacher						

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1

The ratio of chickens to sheep on a farm is 3 : 5

There are 40 sheep.

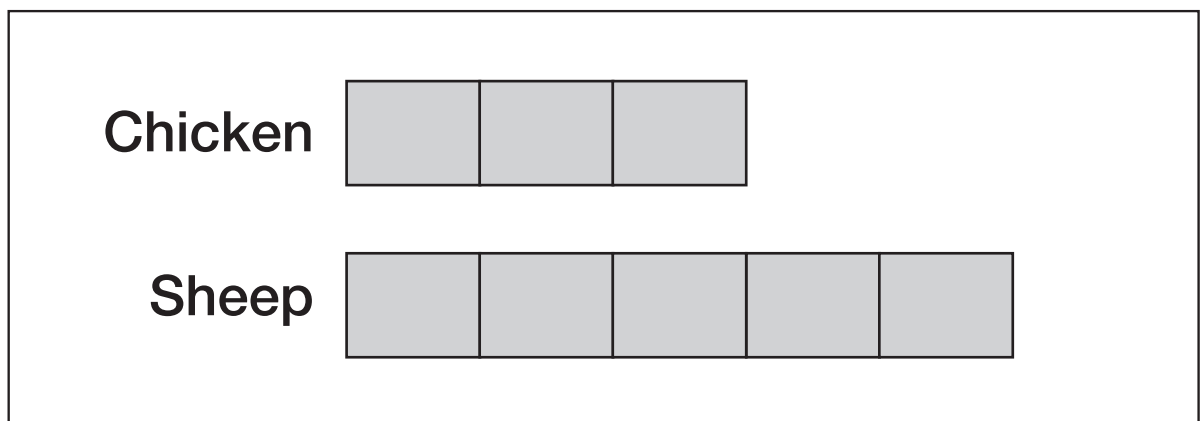
How many chickens are there?

You may use the diagram at the bottom of the page to help you.

2 marks

Express the ratio of chickens to sheep in the form $n : 1$

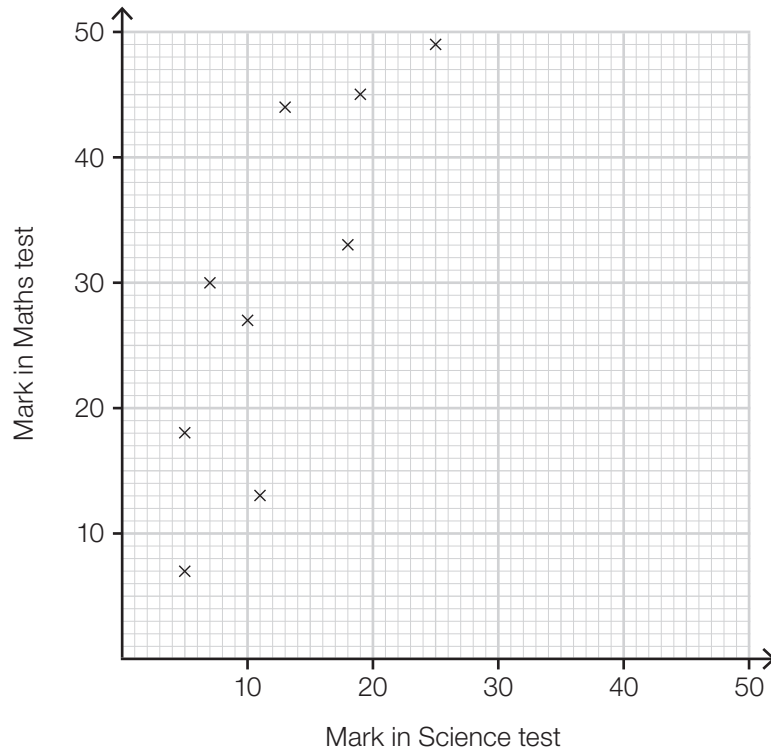
1 mark



2

Some students took a Maths test and a Science test.

The scatter graph shows information about the test marks of eight students.

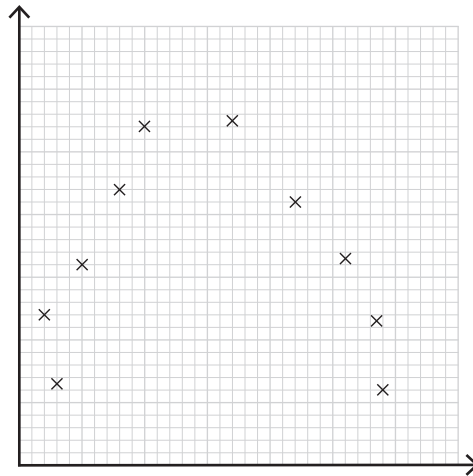


Draw a line of best fit on the graph and use it to estimate the Science mark of someone who scores 40 in the Maths test.

2 marks

Why is it suitable to draw a line of best fit to estimate the Science mark in this case?

1 mark



Dora says this graph shows there is no relationship between the two variables.

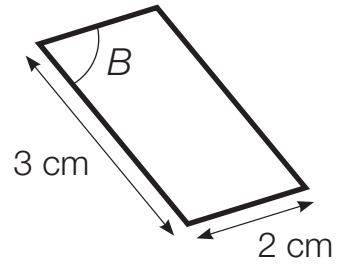
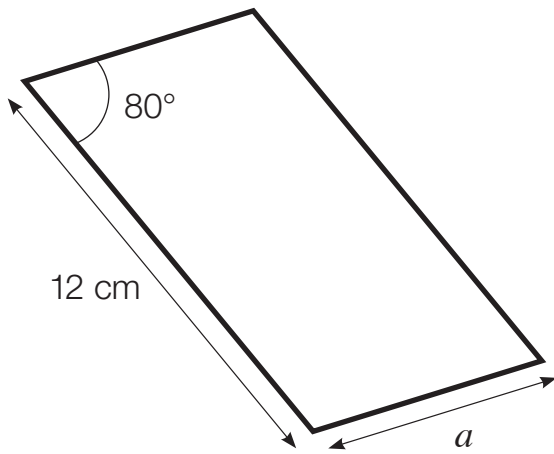
Explain why she is wrong.

1 mark

3

These two parallelograms are similar.

Diagrams not drawn accurately



Work out the length of side a .

1 mark

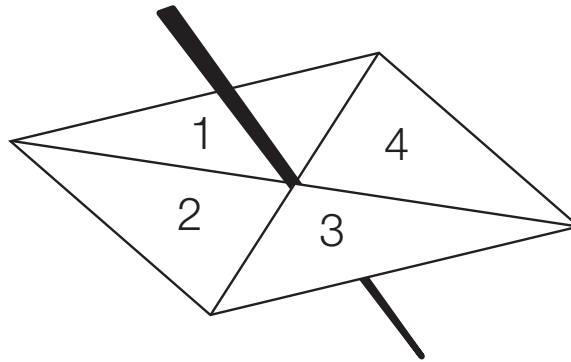
What is the size of angle B .

1 mark

4

A fair 4-sided spinner is spun twice.

The score is the product of the numbers on the spinner.



Complete the table to show the possible scores.

Spinner 1

		1	2	3	4
Spinner 2	1	1			
	2	2	4	6	
	3	3	6		12
	4	4			16

1 mark

What is the probability that the score is greater than 9?

1 mark

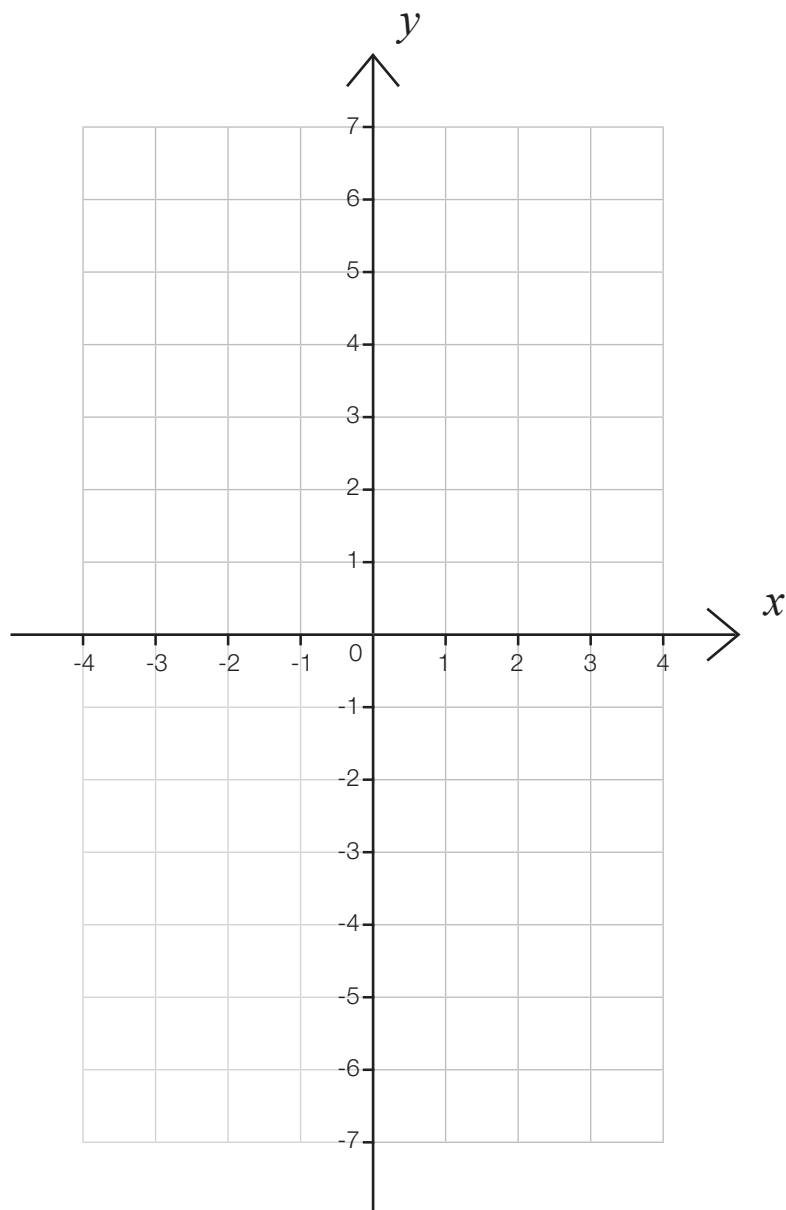
What is the probability that the score is a prime number?

1 mark

5Complete the table of values for $y = x^2 - 5$

x	-3	-2	-1	0	1	2	3
y	4	-1		-5		-1	

2 marks

On the grid, draw the graph of $y = x^2 - 5$ 

2 marks

6

Kat and Mark are travelling home from holiday.

They share the driving.



The ratio of miles that Kat drives to the miles that Mark drives is 1 : 3

Mark says he drives twice as many miles as Kat.

Is he correct?

Explain your reason.

1 mark

Mark drives 120 miles **more** than Kat.

How many miles does each person drive?

Mark	<input type="text"/>	miles
Kat	<input type="text"/>	miles

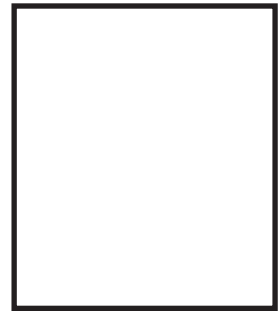
2 marks

7

Calculate

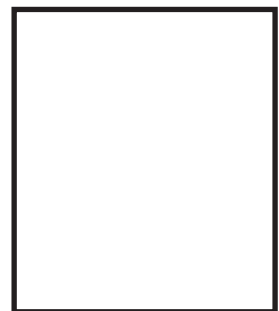
Write your answers in their simplest form.

$$\frac{2}{3} \div \frac{4}{5}$$



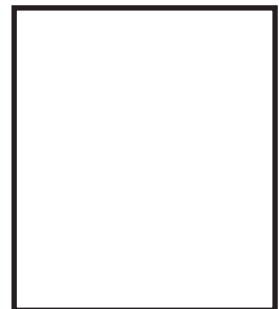
2 marks

$$2 \div \frac{1}{6}$$



1 mark

$$\frac{ab}{3} \times \frac{5}{a}$$



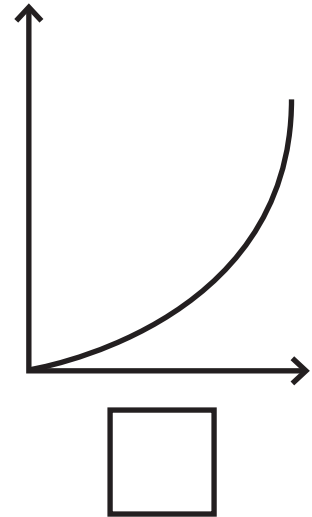
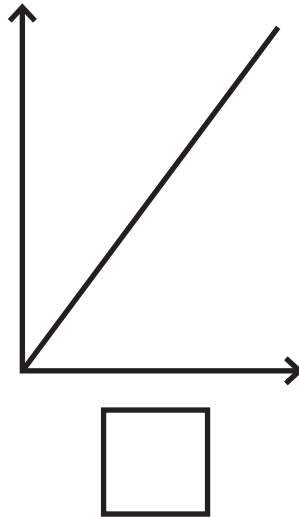
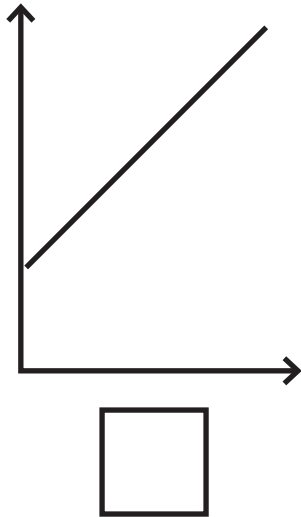
1 mark

8

Peter is driving his car at a constant speed.

The distance he travels is in direct proportion to the time taken.

Tick the graph that shows the relationship between distance travelled and time taken.



1 mark

He travels 12 miles in 15 minutes.

How many miles will Peter travel in 1 hour?

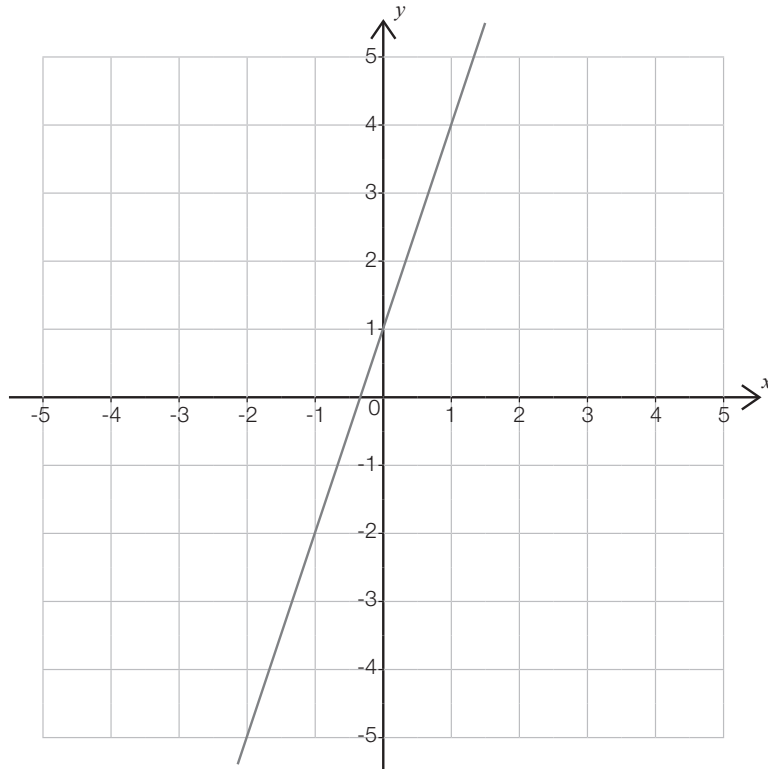
1 mark

How many minutes will it take Peter to travel 32 miles?

1 mark

9

Here is a linear graph.



Find the gradient of the line.

1 mark

State the coordinates of the point where the graph intercepts the y-axis.

1 mark

Find the coordinates of the midpoint of the line segment joining (-2, 1) and (4, 3)

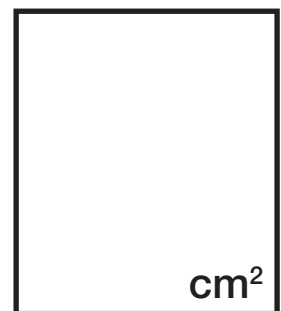
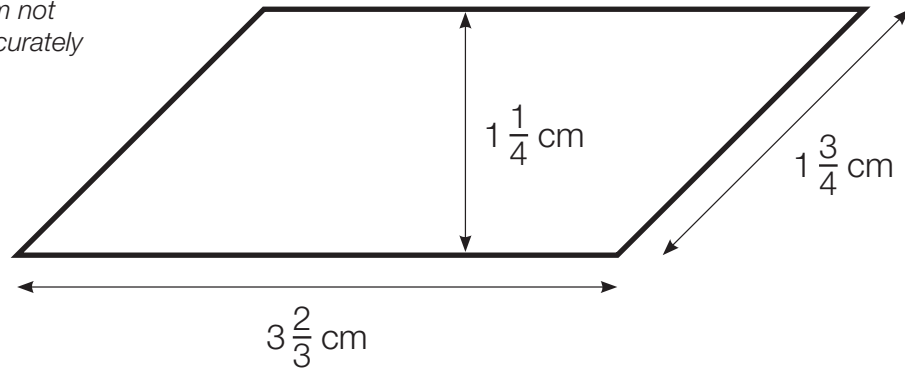
1 mark

10

Find the area of the parallelogram.

Give your answer as a mixed number.

Diagram not drawn accurately



3 marks

11

300 students from Year 7 and Year 8 went on a school trip.

They all went to London, Manchester or York.

40 of the 90 students who went to Manchester were from Year 8

65 Year 7 students and 32 Year 8 students went to London.

Altogether, 147 of the students were from Year 8

Use this information to complete the two-way table.

	London	Manchester	York	Total
Year 7				
Year 8				
Total				

3 marks

12

A rectangular room is drawn to a scale of 1 : 50

The drawing of the room is 15 cm long and 14 cm wide.

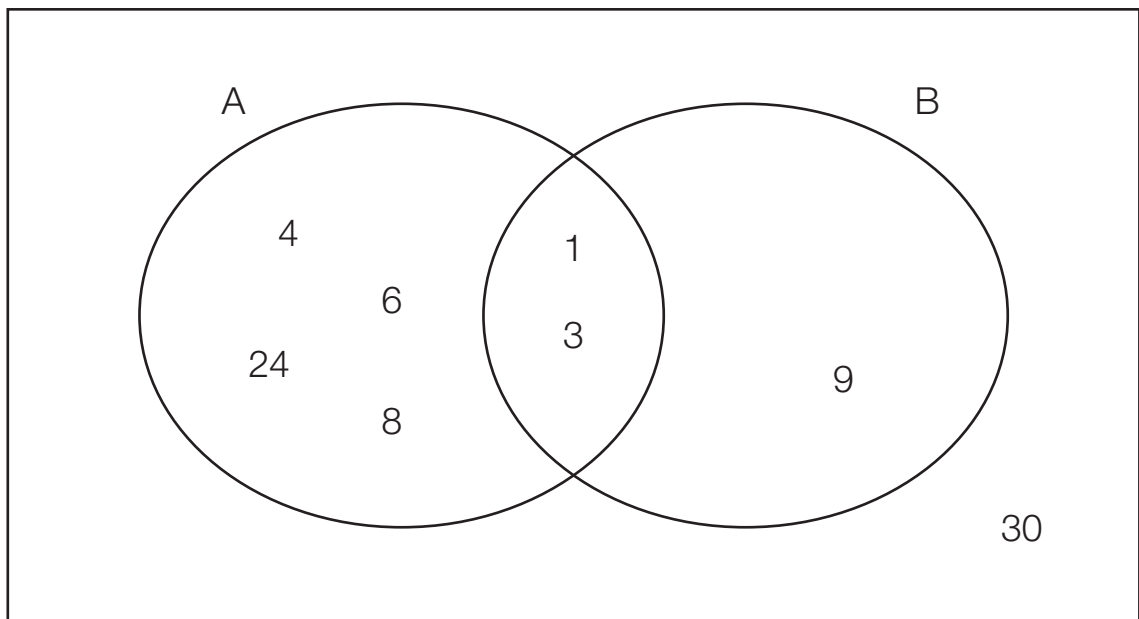
Work out the area of the room.

State the units of your answer.

3 marks

13

Here is a Venn diagram.



One of the numbers in the Venn diagram is chosen at random.

Work out the probability the number is a member of $A \cap B$.

1 mark

Work out the probability the number is a member of A' .

1 mark

END OF TEST

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