

Year 9

Mathematics

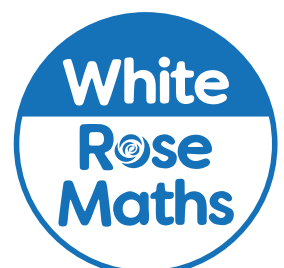
Foundation: No calculator allowed

Time allowed: 45 minutes

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

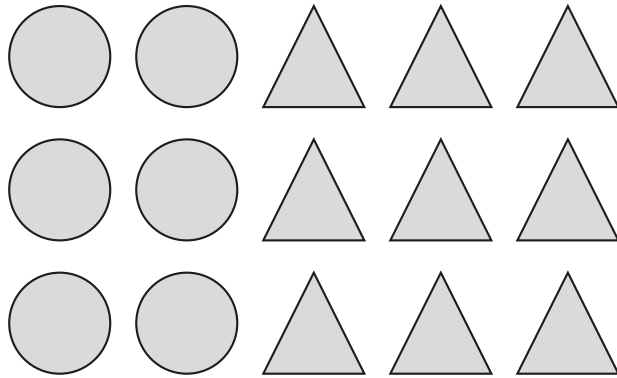
This assessment has been designed by White Rose Maths.

For more information, please visit www.whiterosemaths.com



1

Jack makes this pattern using circles and triangles.



What is the ratio of circles to triangles?

Write your answer in its simplest form.

2 marks

Jack makes another pattern using squares and rectangles in the ratio 3 : 4

He uses 15 squares.

How many rectangles does he use?

1 mark

2

The probability that it rains is 0.8

What is the probability that it does not rain?

1 mark

3

Work out the values of the expressions.

$$7^2$$

1 mark

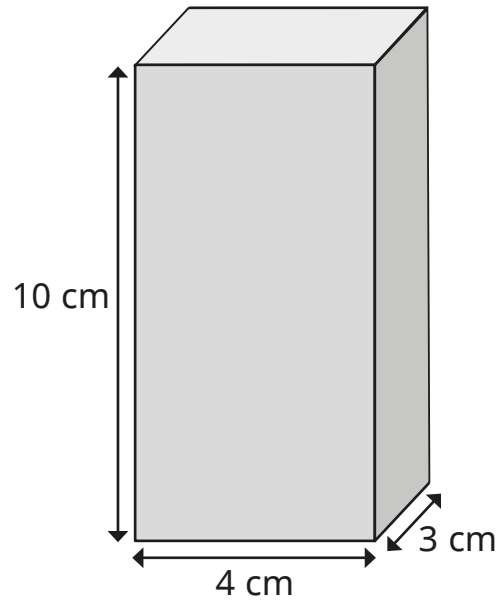
$$2^4$$

1 mark

4

Work out the volume of the cuboid.

State units with your answer.



2 marks

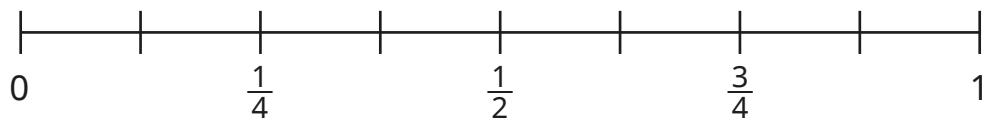
5

There are 8 chocolates in a box.

- 3 are milk chocolates.
- 4 are white chocolates.
- 1 is a dark chocolate.

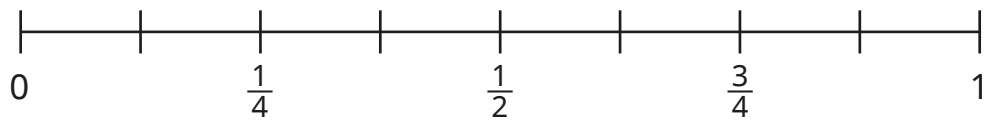
Whitney takes a chocolate from the box at random.

On the probability scale, mark with a cross (×) the probability that Whitney takes a white chocolate.



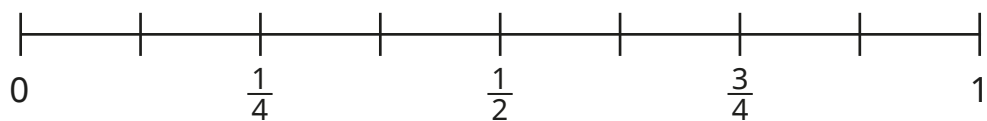
1 mark

On the probability scale, mark with a cross (×) the probability that Whitney takes a dark chocolate.



1 mark

On the probability scale, mark with a cross (×) the probability that Whitney takes a milk, white or dark chocolate.



1 mark

6

Solve the inequality.

$$x + 3 > 10$$

2 marks

Solve the equation.

$$3 = 5c + 8$$

c =

2 marks**7**

An electricity company increases its prices by 10%.

Mrs Lee's electricity bill was £50

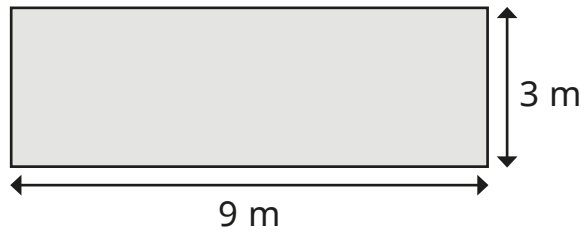
How much is her bill after the increase?

£

2 marks

8

Here is a rectangle.



*diagrams not
drawn accurately*

It is enlarged by scale factor 2

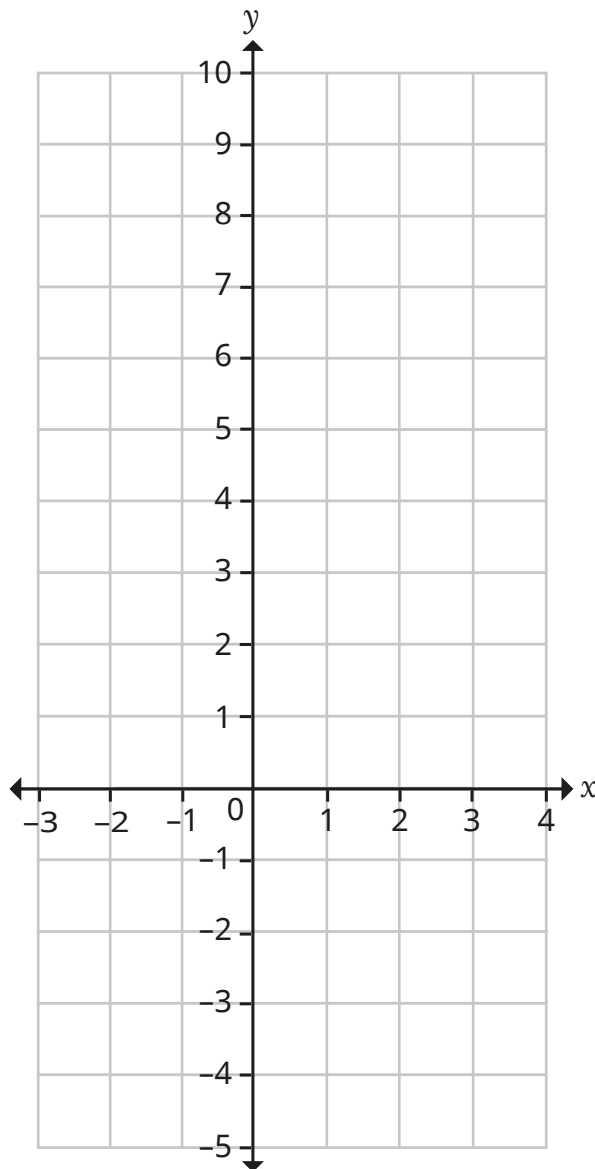


What is the perimeter of the new rectangle?

2 marks

9Complete the table of values for $y = 3x + 1$

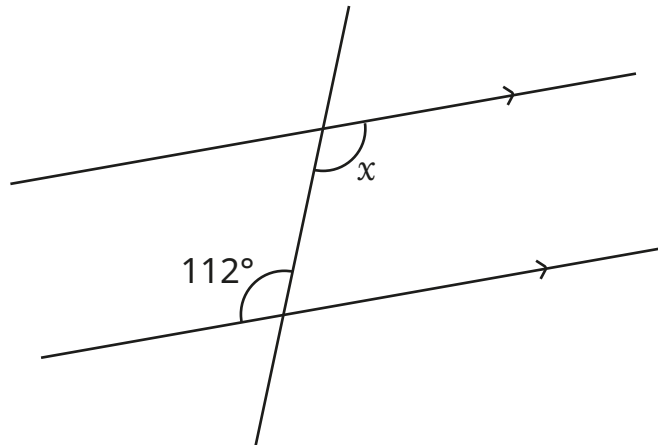
x	-2	-1	0	1	2	3
y		-2		4		10

2 marksOn the grid, draw the graph of $y = 3x + 1$ for values of x from -2 to 3

2 marks

10

The diagram shows a pair of parallel lines.



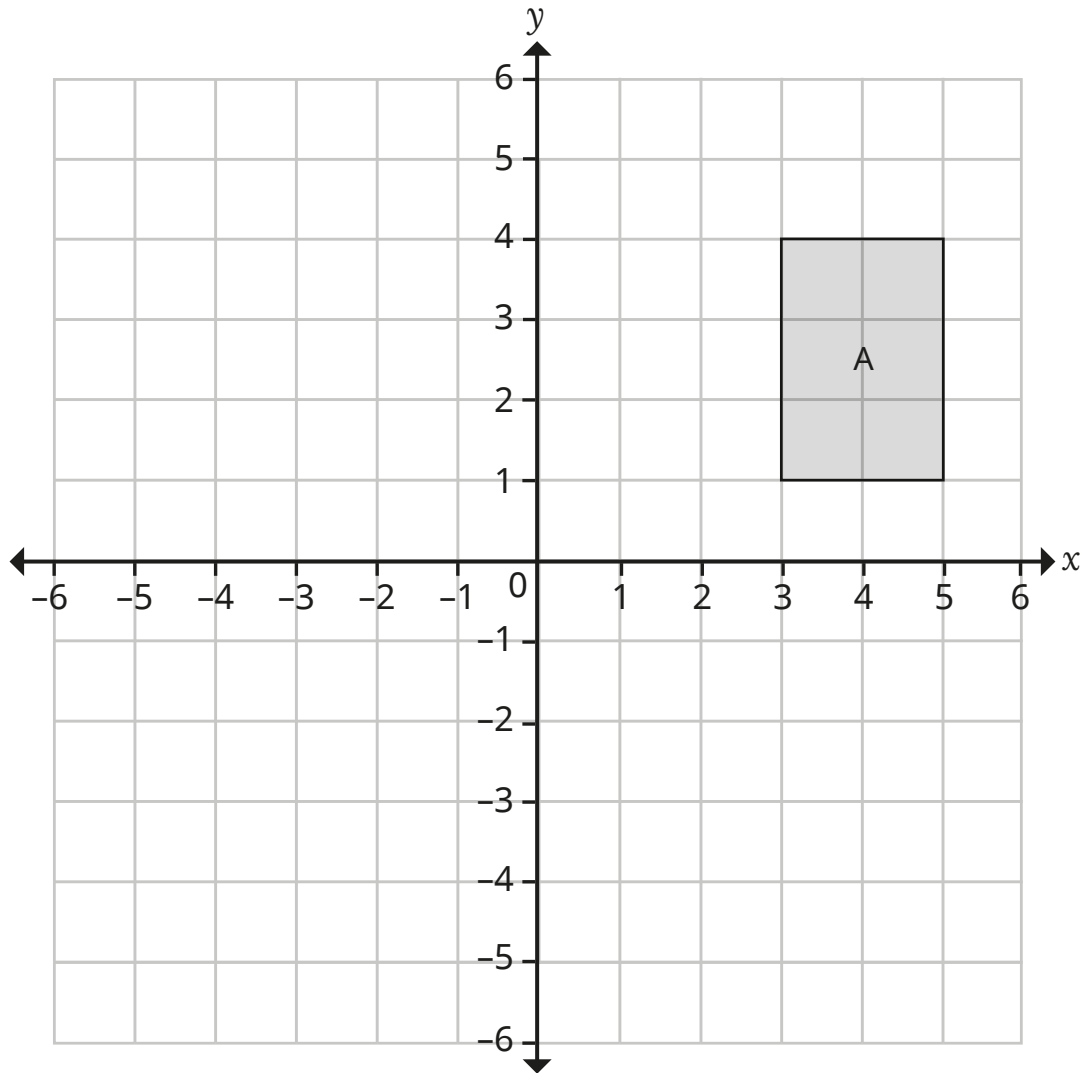
Write down the size of angle x .

1 mark

Give a reason for your answer.

1 mark

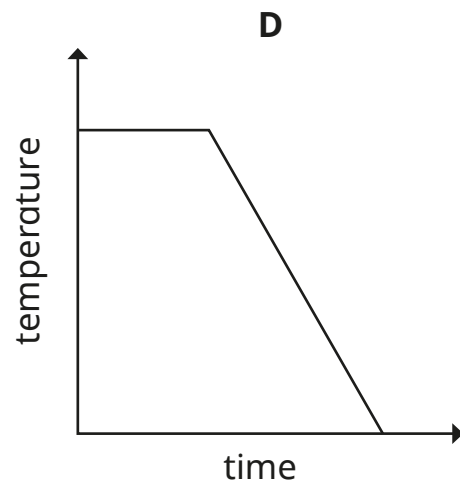
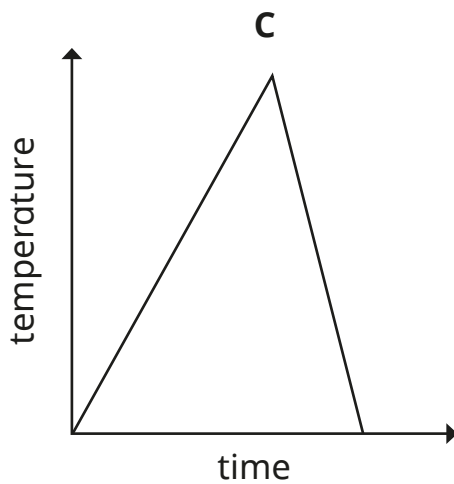
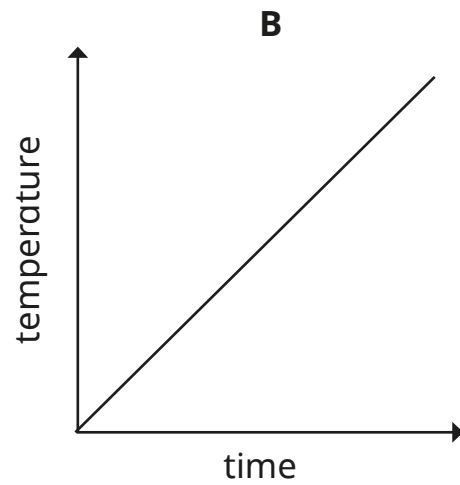
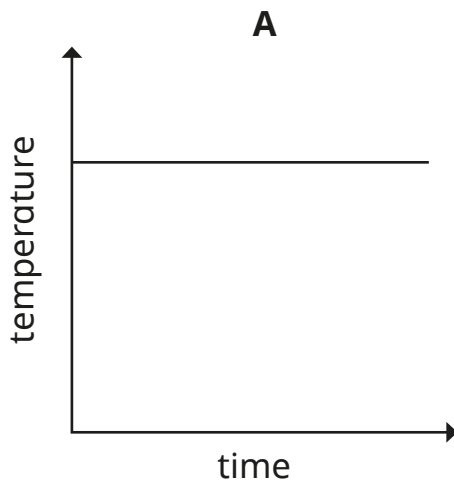
11



Translate rectangle A by vector $\begin{pmatrix} -7 \\ 1 \end{pmatrix}$.

2 marks

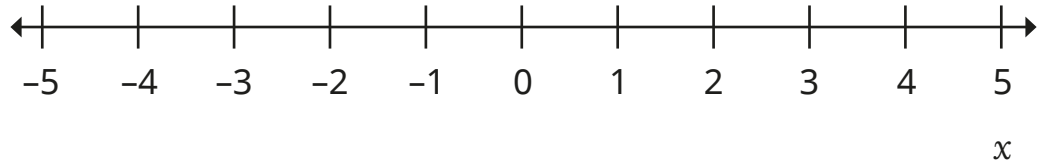
Here are four temperature–time graphs.



Match each graph to its correct description.

The first one has been done for you.

The temperature starts at 0 °C and keeps rising.	B
The temperature stays the same for a time and then falls.	
The temperature rises and then falls quickly.	
The temperature is always the same.	

13Show $x > -3$ on the number line.

2 marks y is an integer.

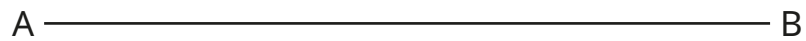
$$-1 < y \leq 4$$

Write down all the possible values of y .

2 marks

14

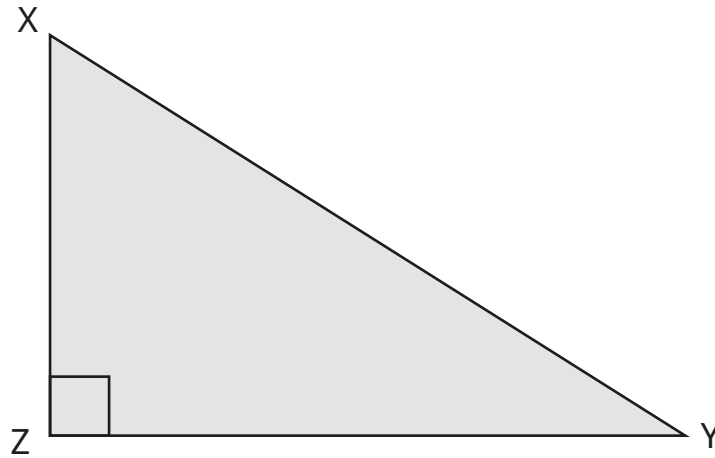
Construct the perpendicular bisector of the line segment AB.



2 marks

15

Here is a right-angled triangle, XYZ.



$$XY = 10 \text{ cm}$$

$$ZY = 8 \text{ cm}$$

Work out the length of XZ.

cm

3 marks

16

The sum of three consecutive numbers is 42

Work out the smallest of the numbers.

2 marks

END OF TEST

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