

Year 9

Mathematics

Core: Calculator allowed

Time allowed: 45 minutes

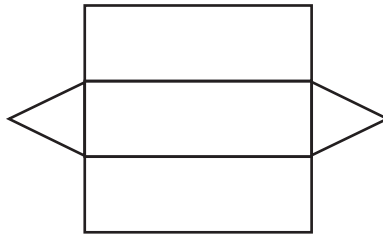
First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
Teacher						

This assessment has been designed by White Rose Maths.
For more information, please visit www.whiterosemaths.com



1

Here is the net of a 3-D shape.

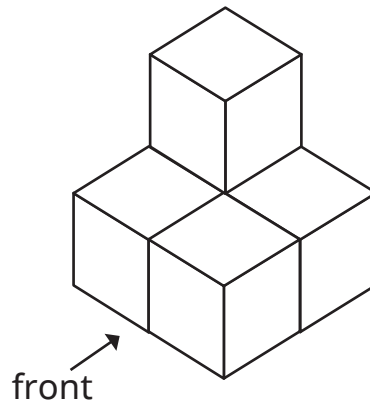


What is the mathematical name of the shape?

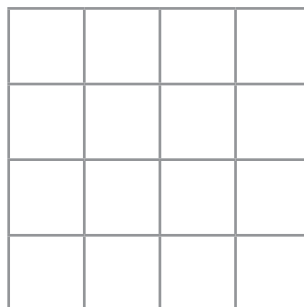
1 mark

2

A solid object is made using five centimetre cubes.

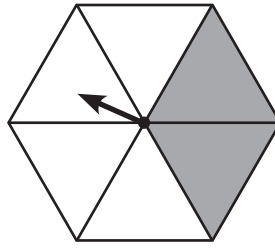


On the grid, draw the front elevation of the object.



2 marks

3



The probability of the spinner landing on grey is $\frac{1}{2}$

Is the statement true or false?

Circle your answer.

True

False

Explain your reasoning.

1 mark

4

A scale drawing is drawn such that 1 cm represents 50 cm.
The length of a wall on the scale drawing is 35 cm.

How long is the actual wall?

Give your answer in metres.

m

3 marks

5

Draw an angle of 215° from point A.

A _____

 1 mark

6

Expand and simplify $(y + 9)(y + 1)$.

 2 marks

7

Use a ruler and pair of compasses to construct the perpendicular bisector of PQ.

You must show clearly all your construction arcs.



2 marks

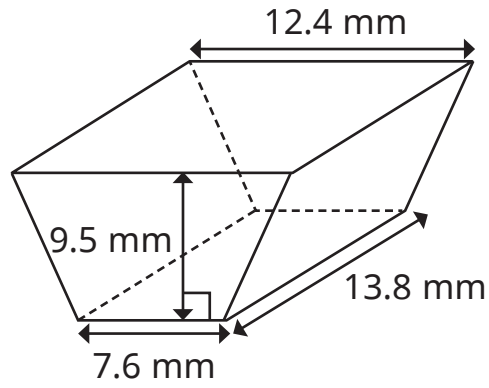
8

Show that the straight lines with equations $y = 3x + 4$ and $y = 10 - 2x$ meet when $x = \frac{6}{5}$

2 marks

9

The diagram shows a prism, the cross-section of which is a trapezium.



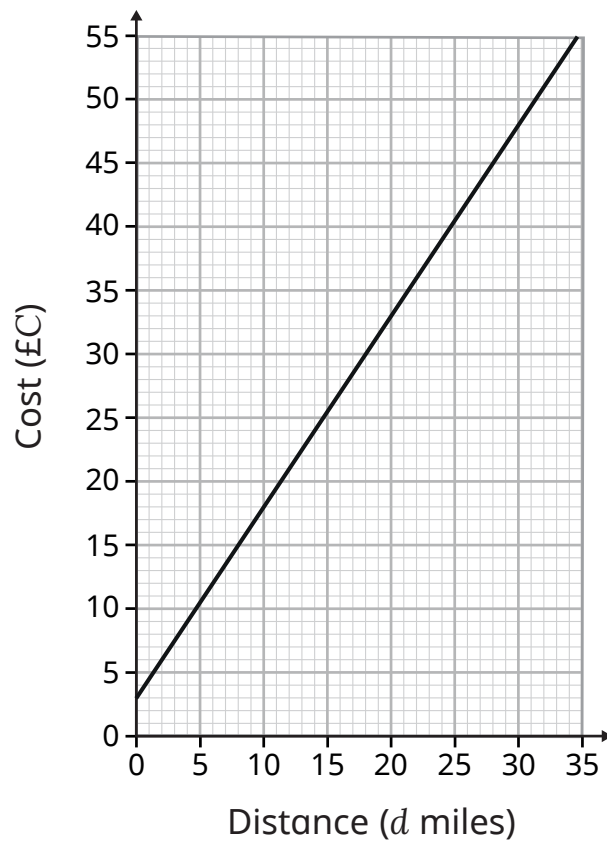
Calculate the volume of the prism.

mm^3

3 marks

10

The graph shows the cost of a taxi journey for different distances.



How much does it cost to travel 15 miles?

£

1 mark

The equation of the line is $C = 1.5d + 3$

Explain what 1.5 represents in the context of the question.

1 mark

Explain what 3 represents in the context of the question.

1 mark

11

Sketch the locus of points that are 2 cm away from the line AB.

A ————— B

3 marks

12

Rosie is 3 times as old as Aisha.

Filip is 4 years younger than Aisha.

The sum of their ages is 21

Calculate the range of their ages.



4 marks

13

$$8p = 52 \text{ and } 3 - q = 10$$

Work out the value of $(pq)^2$

3 marks

14

The point $(3, a)$ lies on the line with equation $y = 2x - 9$

Work out the value of a .

1 mark

The point $(b, 13)$ also lies on the line with equation $y = 2x - 9$

Form and solve an equation to work out the value of b .

2 marks

15

Rosie makes a conjecture.

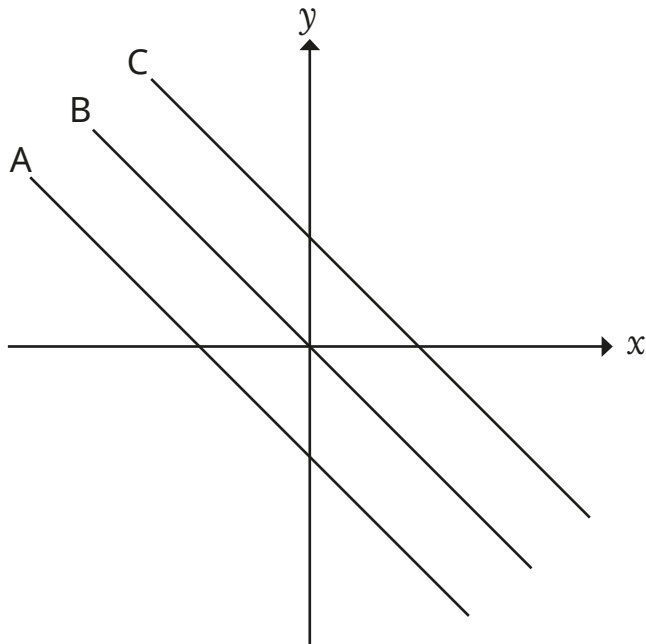
She says, "If a pair of triangles have two equal sides and one equal angle, then they are always congruent."

Show that Rosie's conjecture is false.

1 mark

16

Three parallel lines are drawn on a pair of axes.



The equation of line A is $y = -5 - 3x$.

Write down the equation of line B.

1 mark

Suggest a possible equation for line C.

1 mark

17

A cylinder has a diameter of 1.2 m.

The height of the cylinder is 0.4 m.

Work out the volume of the cylinder.

m^3

2 marks

Work out the surface area of the cylinder.

m^2

2 marks

END OF TEST