

Area and Volume

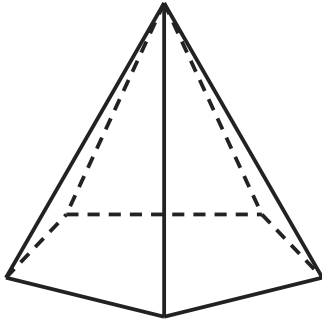
ANSWERS

Calculator | 30 minutes | Total marks: 31

Name

Class

- 1 The diagram shows a pyramid with a pentagon for its base.



- (a) How many faces does it have?

Answer 6 (1) [1 mark]

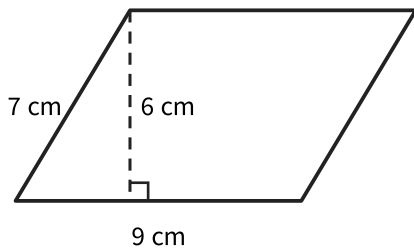
- (b) How many edges does it have?

Answer 10 (1) [1 mark]

- (c) How many vertices does it have?

Answer 6 (1) [1 mark]

2



Not drawn accurately

Work out the area of the parallelogram.

$$9 \times 6 (1)$$

Answer 54 (1) cm² [2 marks]

- 3 A circle has a diameter of 12 cm.

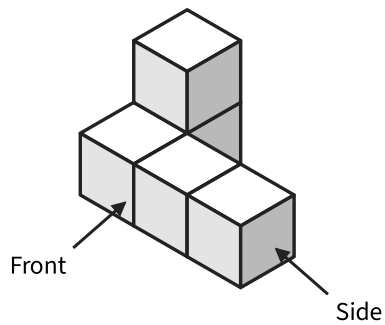
Work out the circumference of the circle. Give your answer to 1 decimal place.

$$\pi \times 12 (1)$$

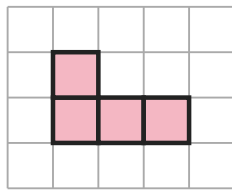
Answer 37.7 (1) cm [2 marks]

4

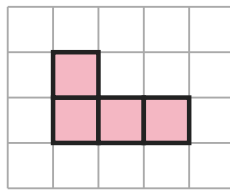
The diagram shows a solid made from five cubes.



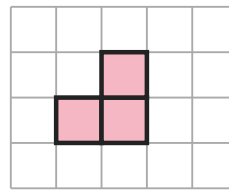
On the grids below, draw the plan, the front elevation and the side elevation of the solid.



Plan



Front elevation

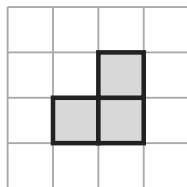


Side elevation

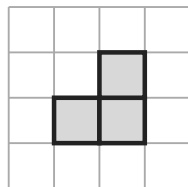
(1) for each view [3 marks]

5

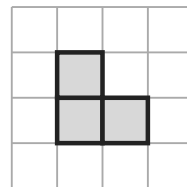
These are the plan, front elevation and side elevation of a solid made from cubes.



Plan

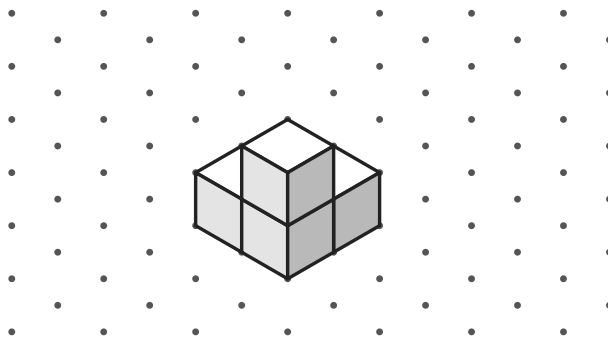


Front elevation



Side elevation

(a) Draw the solid on the isometric paper.



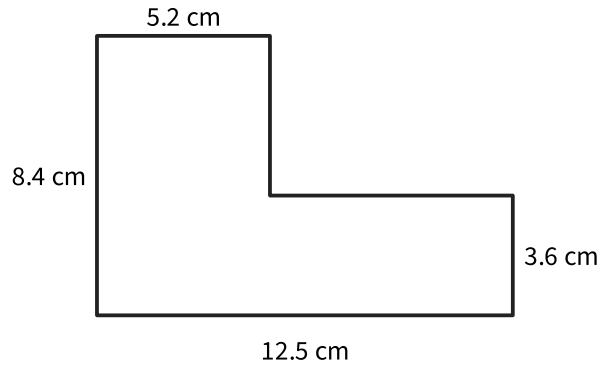
(2) all correct, (1) one cube wrong or missing [2 marks]

(b) How many cubes is the solid made from?

Answer 4 (1)

[1 mark]

6



Not drawn accurately

Work out the perimeter of the shape.

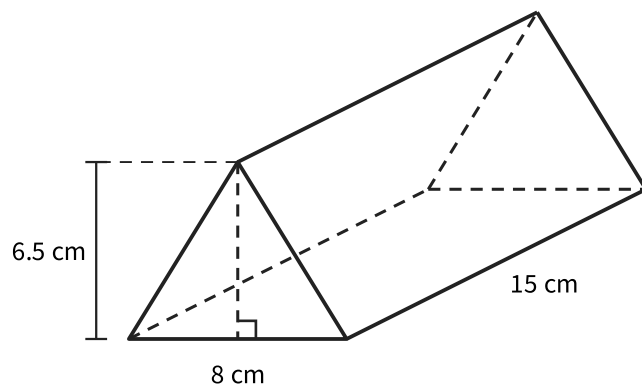
missing lengths 7.3 cm and 4.8 cm (1)

$12.5 + 8.4 + 5.2 + 4.8 + 7.3 + 3.6$ (1)

Answer 41.8 (1) cm [3 marks]

7

The diagram shows a triangular prism.



Not drawn accurately

Work out the volume of the prism.

$$\frac{1}{2} \times 8 \times 6.5 = 26 \text{ (1)}$$

Answer 390 (1) cm³ [2 marks]

- 8 A box is a cuboid 9 cm long, 6 cm wide and 4 cm high. It has no lid.

Work out the total area of card needed to make the box.

$$9 \times 6 = 54, 9 \times 4 = 36, 6 \times 4 = 24 \text{ (1)}$$

$$54 + 2 \times 36 + 2 \times 24 \text{ (1)}$$

Answer 174 (1) cm² [3 marks]

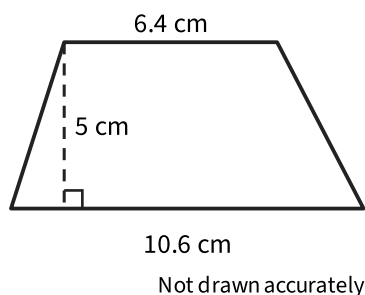
- 9 A circular rug has a diameter of 1.6 m.

Work out the area of the rug. Give your answer to 2 decimal places.

$$\pi \times 0.8^2 \text{ (1)}$$

Answer 2.01 (1) m² [2 marks]

10



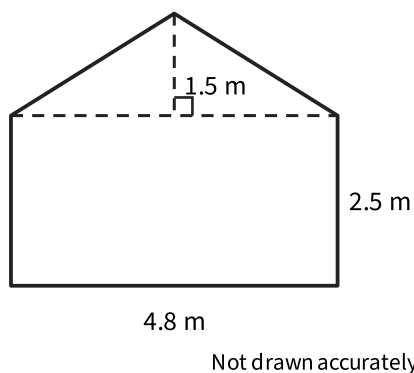
Work out the area of the trapezium.

$$\frac{1}{2} \times (6.4 + 10.6) \times 5 \text{ (1)}$$

Answer 42.5 (1) cm² [2 marks]

11

The end wall of a shed is a rectangle with a triangle on top.



Work out the area of the end wall.

$$\text{rectangle } 4.8 \times 2.5 = 12 \text{ (1)}$$

$$\text{triangle } \frac{1}{2} \times 4.8 \times 1.5 = 3.6 \text{ (1)}$$

Answer 15.6 (1) m² [3 marks]

12

A bicycle wheel has a diameter of 64 cm.

The bicycle travels 500 m in a straight line.

Work out the number of complete turns the wheel makes.

$$\text{circumference } \pi \times 64 = 201.1 \text{ cm (1)}$$

$$50\,000 \div 201.1 = 248.6... \text{ (1)}$$

Answer 248 (1)

[3 marks]

Question	Topic	RAG
1	I can count the faces, edges and vertices of a 3D shape	
2	I can find the area of a parallelogram	
3	I can find the circumference of a circle	
4	I can draw the plan and elevations of a solid	
5	I can draw a solid from its plan and elevations	
6	I can find the perimeter of a compound shape	
7	I can find the volume of a prism	
8	I can find the surface area of a cuboid	
9	I can find the area of a circle	
10	I can find the area of a trapezium	
11	I can find the area of a shape made from a rectangle and a triangle	
12	I can use the circumference to solve a problem	