

## Measurement

Notes – use abbreviations to show units (e.g. Centimetres = cm)

- use sq to show squares units for area (e.g.  $10\text{cm}^2 = 10\text{cm sq}$ )
- use cubed to show cubic units for volume (e.g.  $10\text{m}^3 = 10\text{m cubed}$ )

### Level 6

- I can convert between common metric units of length, mass and capacity
- I can connect volume and capacity and their units of measurement
- I can measure, calculate and compare elapsed time
- I can solve problems involving the comparison of lengths and areas using appropriate units

#### Question 6

Which of the following is the same as 53 cm?

**A** 530 m   **B** 5.3 km   **C** 5.3 mm   **D** 0.53 m

#### Question 7

If a train departs from a station every 45 minutes and John misses the 3:10 p.m. train, what time will the next train that departs the station?

**A** 3:45 p.m.   **B** 3:55 p.m.   **C** 3:45 a.m.   **D** 3:45 a.m.

#### Question 8

A tank holds 7 litres of water. What is the volume of the tank?

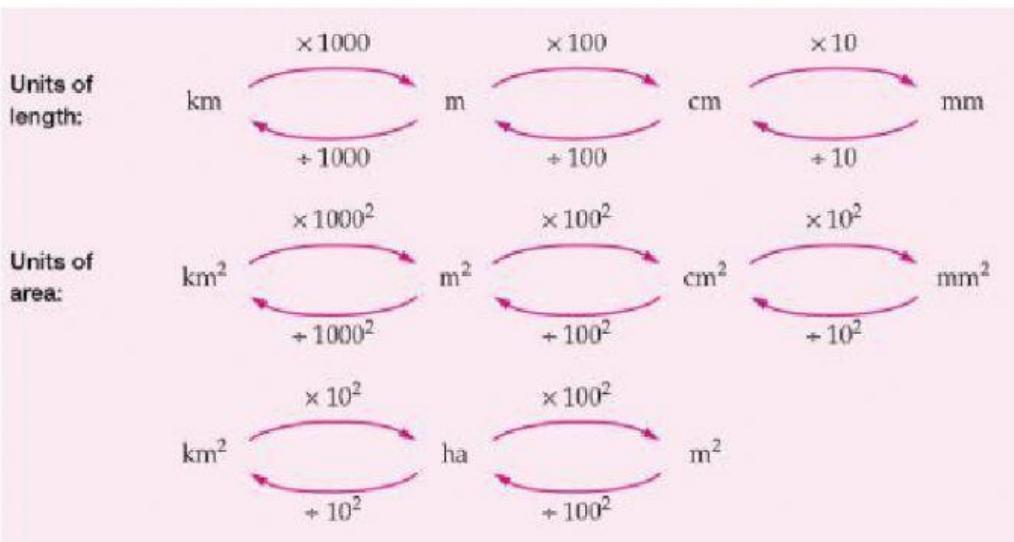
**A** 7  $\text{cm}^3$    **B** 70  $\text{mm}^3$    **C** 700  $\text{mm}^3$    **D** 7000  $\text{cm}^3$

#### Question 9

Which metric unit would be most suitable for measuring the area of a smartphone screen?

**A**  $\text{cm}^2$    **B** litres $^2$    **C**  $\text{m}^2$    **D**  $\text{km}^2$

/4 marks



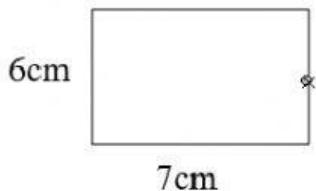
**Level 7**

- I can apply and use the formulas for areas of rectangles
- I can apply and use the formulas for areas of triangles
- I can apply and use the formulas for areas of parallelograms
- I can calculate the volumes of rectangular prisms

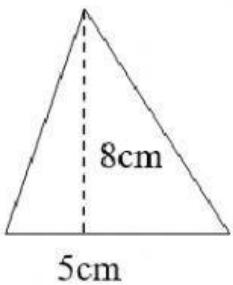
**Question 10:**

Calculate the area of the shapes below. Show ALL working out clearly.

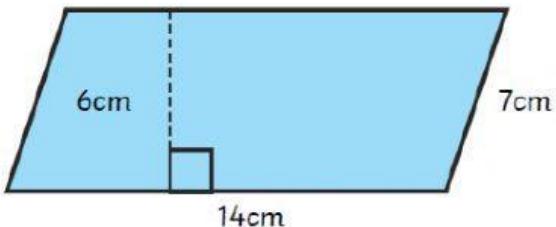
a) Rectangle



b) Triangle



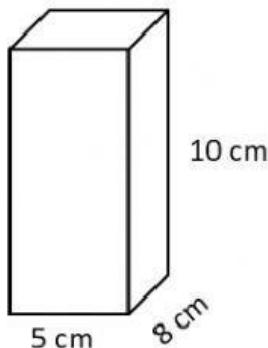
c) Parallelogram



/6 marks

**Question 11:**

Calculate the **volume** of the rectangular prism below. Show ALL working out clearly.



/2 marks

**Question 12:**

If the base of a **rectangular prism** has a **base of  $50 \text{ cm}^2$**  and a **height of 8 cm**. Find the volume.

Show ALL working out clearly.

/2 marks

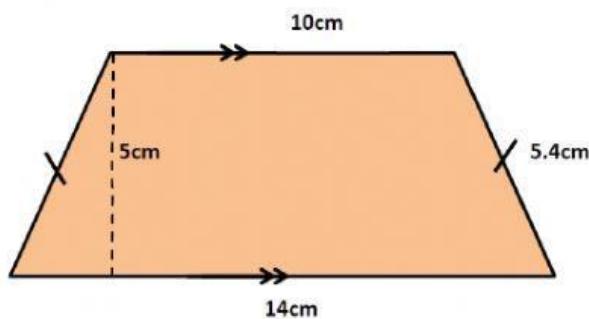
**Level 8**

- I can convert from units of measurement for area and volume
- I can calculate the area of parallelograms, trapeziums, rhombuses and kites
- I can calculate the circumference of a circle
- I can calculate the area of a circle
- I can use formulas to solve problems involving volumes of rectangular and triangular prisms.

**Question 13:**

Calculate the area of the trapezium.

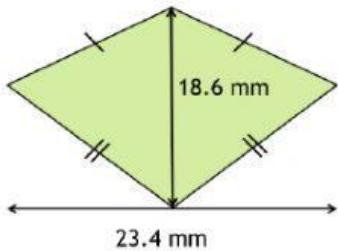
a)



/3 marks

**Question 14:**

Calculate the area of the kite.



/2 mark

**Question 15:**

Complete the following conversions

a)  $144 \text{ mm}^2 = \underline{\hspace{2cm}}$   $\text{cm}^2$

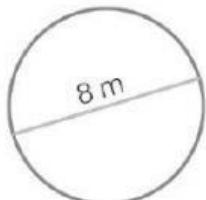
b)  $895\,000 \text{ cm}^3 = \underline{\hspace{2cm}}$   $\text{m}^3$

/2 marks

For Q 16 – 17 use  $\pi$  as 3.14 and answer to 2 decimal places

**Question 16:**

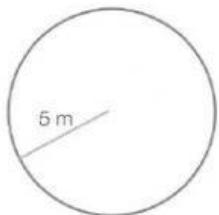
Find the circumference of the circle.



/2 marks

**Question 17:**

Find the area of the circle.

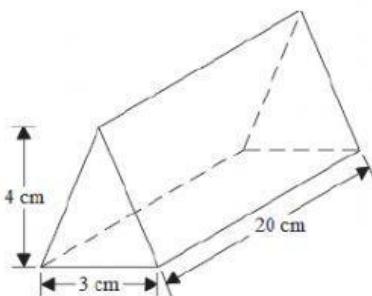


/2 marks

**Question 18:**

The box shown in the diagram contains chocolate.

- Find the volume of the box.
- If the box contains  $15 \text{ cm}^3$  of air, find the volume of the chocolate.



/4 marks

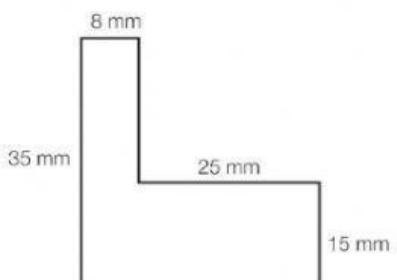
9	I can calculate the total surface area of prisms and regular solids (rectangular prism and triangular prism).
9	I can calculate the surface area of a cylinder.
9	I can calculate the volume of a triangular prism and a rectangular prism.
9	I can calculate the volume of a cylinder.

**Level 9:**

- Calculate the areas of composite shapes ([VCMMG312](#))
- Calculate the surface area and volume of cylinders and solve related problems ([VCMMG313](#))
- Solve problems involving the surface area and volume of right prisms ([VCMMG314](#))
- Investigate very small and very large time scales and intervals ([VCMMG315](#))

**Question 26:**

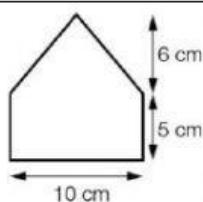
The perimeter of the compound shape below is:



**A** 126 mm   **B** 112 mm   **C** 136 mm   **D** 68 mm

**Question 27:**

The area of this composite shape would be:



**A**  $(10 \times 5) + (10 \times 6) \text{ cm}^2$   
**B**  $(10 \times 15) + (\frac{1}{2} \times 10 \times 6) \text{ cm}^2$   
**C**  $(10 \times 5) + (\frac{1}{2} \times 10 \times 6) \text{ cm}^2$   
**D**  $(10 \times 11) + (\frac{1}{2} \times 10 \times 6) \text{ cm}^2$

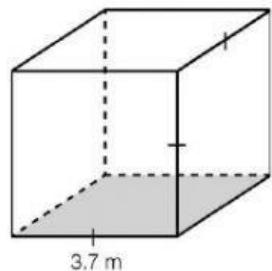
**Question 28:**

When a cube with edge length 20 cm is filled with water it will hold:

**A** 20 L   **B** 6 L   **C** 8 L   **D** 80 L

**Question 29:**

The surface area (SA) of the solid below would be:



**A**  $4 \times 3.7 \times 3.7 \text{ m}^2$    **B**  $3.7 \times 3.7 \times 3.7 \text{ m}^2$   
**C**  $3.7 + 3.7 + 3.7 \text{ m}^2$    **D**  $6 \times 3.7 \times 3.7 \text{ m}^2$

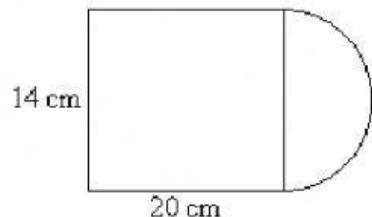
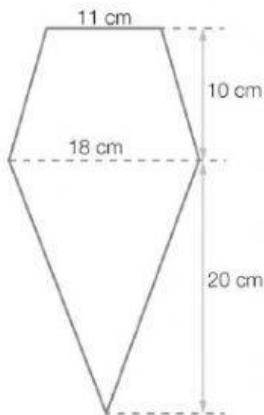
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**Question 30:**

Find the area of the following composite shapes.

a) Area of trapezium + area of triangle

b) Area of rectangle + area of half circle

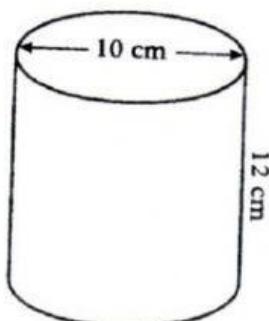


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**Question 31:**

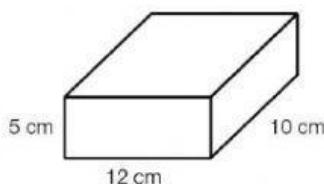
Calculate the volume of the cylinder below correct to one decimal place.



/3

**Question 32:**

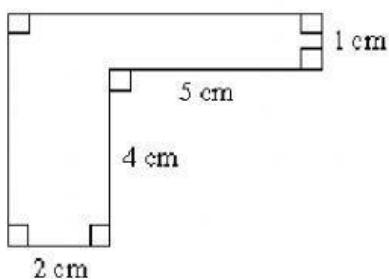
Find the total surface area of the rectangular prism below. (Hint: Draw the net)



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**Question 33:**

Find the perimeter of the following shape.



/3

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