

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?

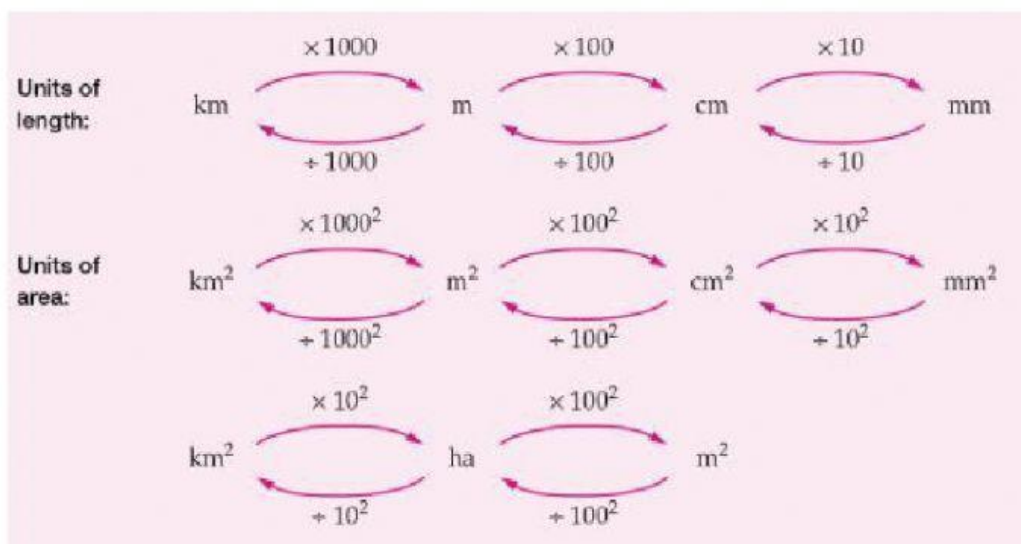
A 7 cm^3 B 70 mm^3 C 700 mm^3 D 7000 cm^3

Question 9

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

A cm^2 B litres^2 C m^2 D km^2

/4 marks



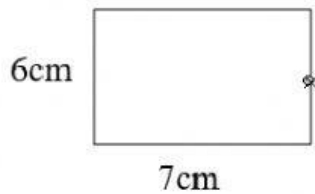
Level 7

- 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

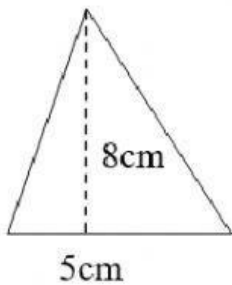
Question 10:

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

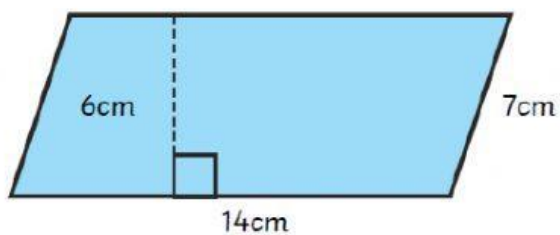
a) Rectangle



b) Triangle



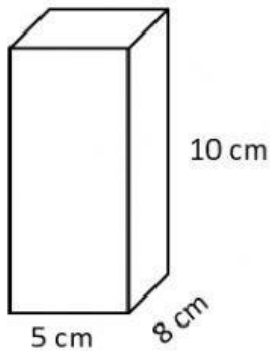
c) Parallelogram



/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 cm²** and a **height of 8 cm**. Find the volume.

Show **ALL** working out clearly.

/2 marks

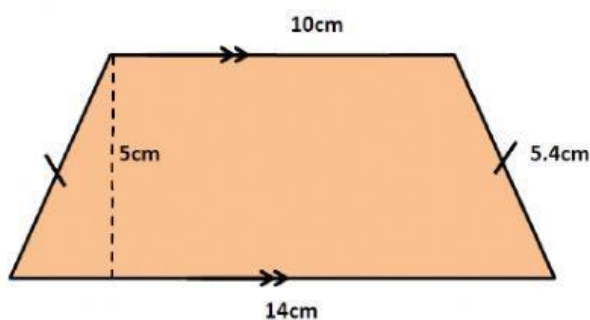
Level 8

- 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.

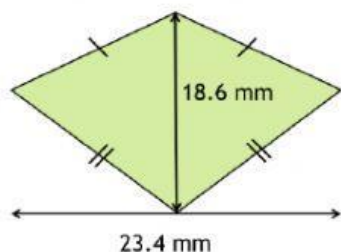
a)



/3 marks

Question 14:

Calculate the area of the kite.



/2 mark

Question 15:

Complete the following conversions

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

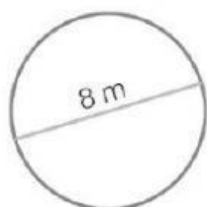
b) $895\,000 \text{ cm}^3 = \text{_____ m}^3$

/2 marks

For Q 16 – 17 use π as 3.14 and answer to 2 decimal places

Question 16:

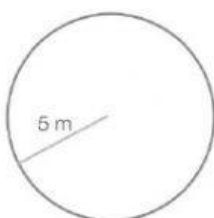
Find the circumference of the circle.



/2 marks

Question 17:

Find the area of the circle.

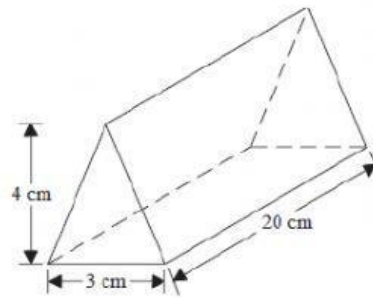


/2 marks

Question 18:

The box shown in the diagram contains chocolate.

- (a) Find the volume of the box.
- (b) If the box contains 15 cm^3 of air, find the volume of the chocolate.



/4 marks

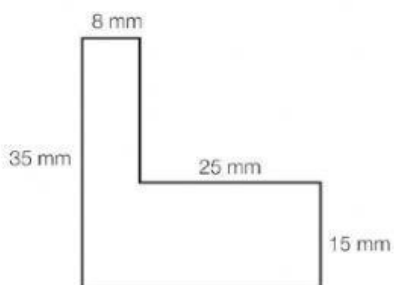
9	I can calculate the total surface area of prisms and regular solids (rectangular prism and triangular prism).
9	I can calculate the surface area of a cylinder.
9	I can calculate the volume of a triangular prism and a rectangular prism.
9	I can calculate the volume of a cylinder.

Level 9:

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

Question 26:

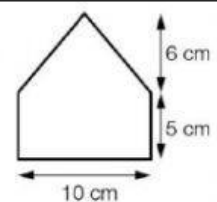
The perimeter of the compound shape below is:



- 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 $(10 \times 11) + (\frac{1}{2} \times 10 \times 6) \text{ cm}^2$

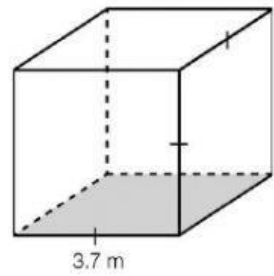
Question 28:

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:



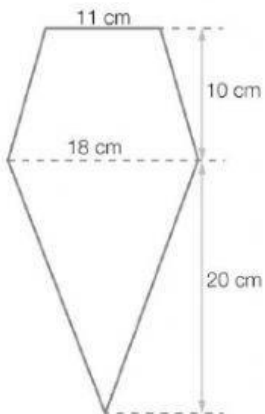
- A** $4 \times 3.7 \times 3.7 \text{ m}^2$ **B** $3.7 \times 3.7 \times 3.7 \text{ m}^2$
C $3.7 + 3.7 + 3.7 \text{ m}^2$ **D** $6 \times 3.7 \times 3.7 \text{ m}^2$

/4

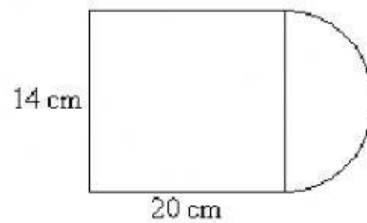
Question 30:

Find the area of the following composite shapes.

a) Area of trapezium + area of triangle



b) Area of rectangle + area of half circle

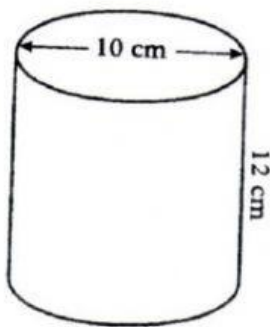


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Question 31:

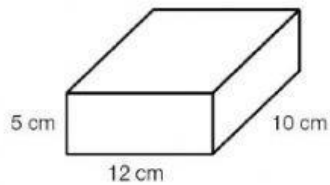
Calculate the volume of the cylinder below correct to one decimal place.



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Question 32:

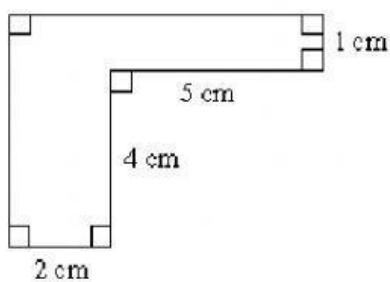
Find the total surface area of the rectangular prism below. (Hint: Draw the net)



/3

Question 33:

Find the perimeter of the following shape.



/3

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