Year 8: Pre-Topic CAT

Name:_____

Marks: _____/50

Measurement

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

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

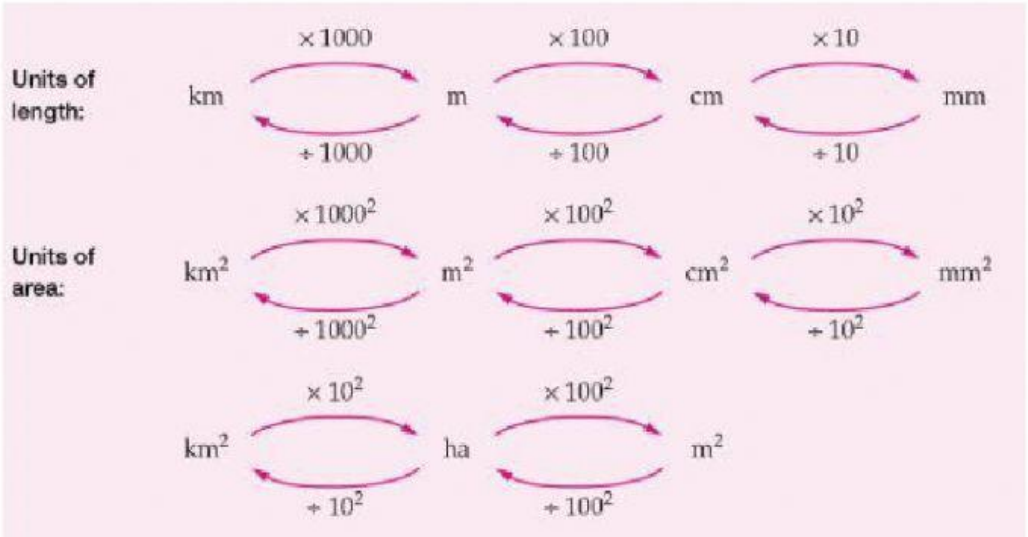
A 7 cm^3 **B** 70 mm^3 **C** 700 mm^3 **D** 7000 cm^3

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



LIVEWORKSHEETS

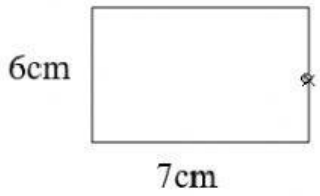
Level 7

- 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

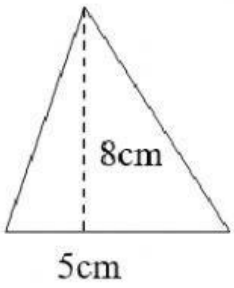
Question 10:

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

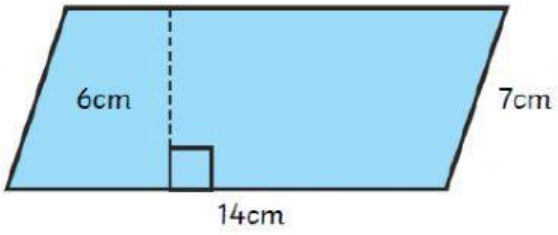
a) Rectangle



b) Triangle



c) Parallelogram

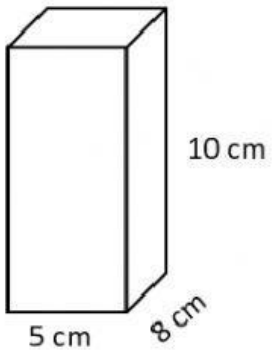


/6 marks

LIVEWORKSHEETS

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

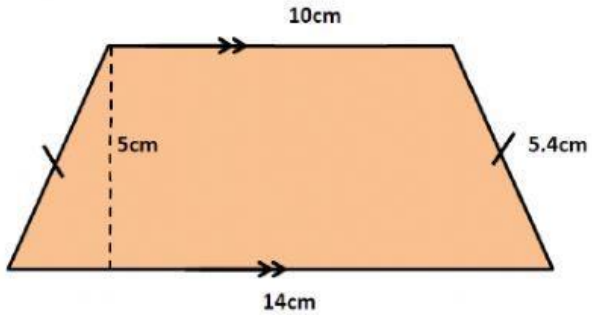
Level 8

- 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)

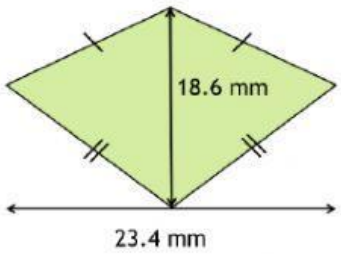


/3 marks

LIVEWORKSHEETS

Question 14:

Calculate the area of the kite.



/2 mark

Question 15:

Complete the following conversions

a) 144 mm^2 = _____ cm^2

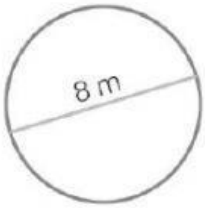
b) 895 000 cm^3= _____ m^3

/2 marks

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

Question 16:

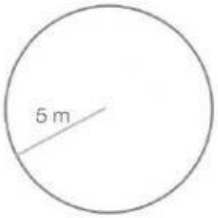
Find the circumference of the circle.



/2 marks

Question 17:

Find the area of the circle.



/2 marks

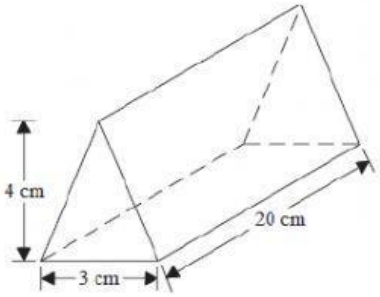
LIVEWORKSHEETS

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

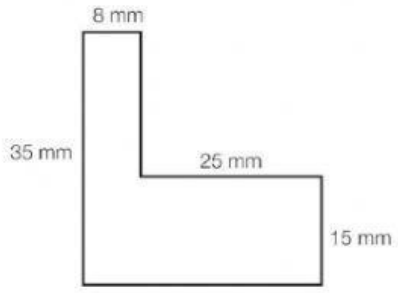
9	I can calculate the total surface area of prisms and regular solids (rectangular prism and triangular prism).
9	I can calculate the surface area of a cylinder.
9	I can calculate the volume of a triangular prism and a rectangular prism.
9	I can calculate the volume of a cylinder.

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:

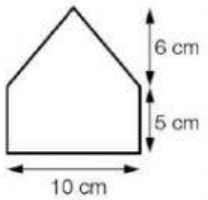
The perimeter of the compound shape below is:



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

Question 27:

The area of this composite shape would be:



A $(10 \times 5) + (10 \times 6)$ cm^2

B $(10 \times 15) + (\frac{1}{2} \times 10 \times 6)$ cm^2

C $(10 \times 5) + (\frac{1}{2} \times 10 \times 6)$ cm^2

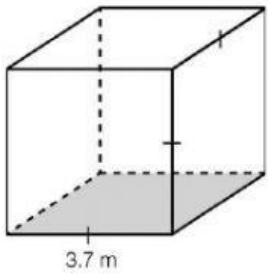
D $(10 \times 11) + (\frac{1}{2} \times 10 \times 6)$ cm^2

LIVEWORKSHEETS

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 $4 \times 3.7 \times 3.7\ m^2$ **B** $3.7 \times 3.7 \times 3.7\ m^2$

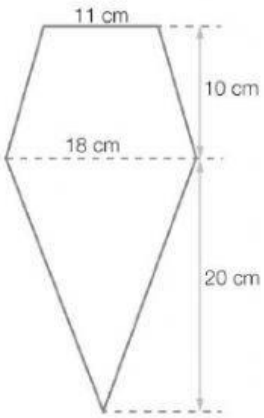
C $3.7 + 3.7 + 3.7\ m^2$ **D** $6 \times 3.7 \times 3.7\ m^2$

/4

Question 30:

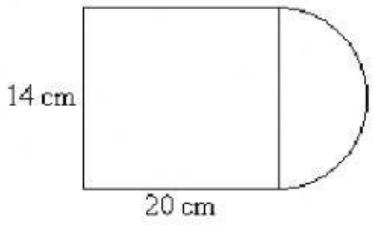
Find the area of the following composite shapes.

a) Area of trapezium + area of triangle



/4

b) Area of rectangle + area of half circle

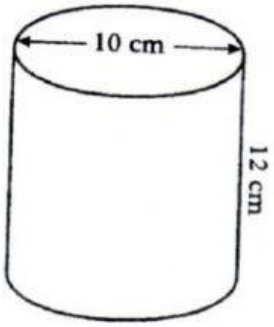


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LIVEWORKSHEETS

Question 31:

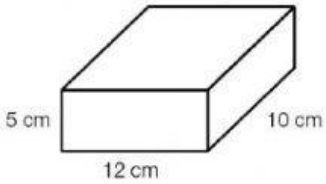
Calculate the volume of the cylinder below correct to one decimal place.



/3

Question 32:

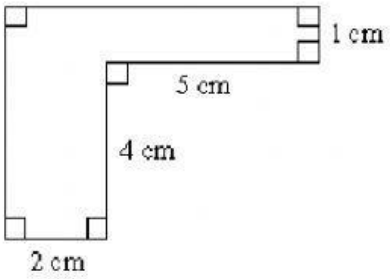
Find the total surface area of the rectangular prism below. (Hint: Draw the net)



/3

Question 33:

Find the perimeter of the following shape.



/3

----------END of PAPER----------

LIVEWORKSHEETS