NAME

Time:

Non-Calculator Questions

1 An area is 300 cm^2, correct to the nearest cm^2.

Write down the minimum possible area.

(1 mark)

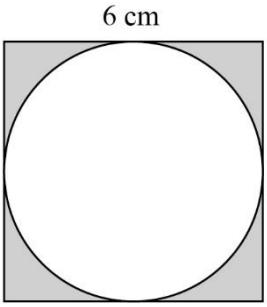
3 The height of a bottle is 25 cm correct to the nearest cm.

The height of the shelf in the cupboard is 250 mm correct to the nearest mm.

Explain why the bottle may not fit upright on the shelf.

(2 marks)

5 The diagram shows a circle inside a square.



The square has sides 6 cm.

Each side of the square is a tangent to the circle.

a Using 3 as an approximation for π, work out an estimate of the total area of the shaded regions.

(3 marks)

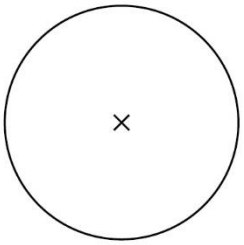
b Is your estimate in part a an *underestimate* or *overestimate*?

Explain your answer.

(1 mark)

6th

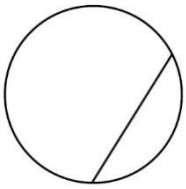
7 **a** Here is a diagram of a circle, with centre marked ×.



On the diagram, draw a diameter of the circle.

(1 mark)

b Write down the mathematical name for the straight line inside the circle below.



(1 mark)

NAME

Calculator Questions

7th

9 The circumference of a circle is 150 cm.

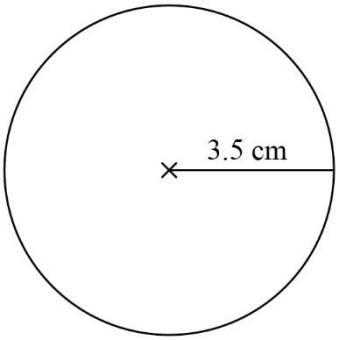
Work out the diameter of the circle.

Give your answer correct to 1 decimal place.

(2 marks)

7th

11 The diagram shows the top of a candle.



The top of the candle is in the shape of a circle.

The radius of the circle is 3.5 cm.

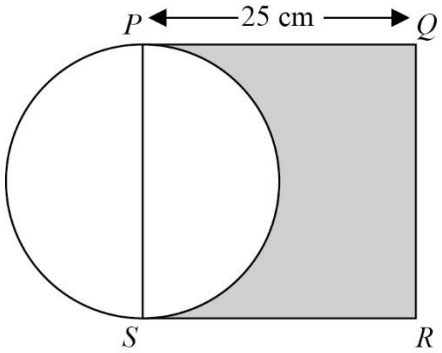
The candle company want to decorate the packaging on the candle with a piece of ribbon around the base.

Calculate the least length of ribbon the company will need for each candle.

(3 marks)

8th

13 Here is a diagram showing a square *PQRS* and a circle.



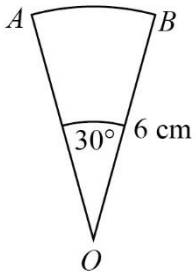
PS is a diameter of the circle.

Calculate what percentage of the area of the square is shaded.

Give your answer correct to 3 significant figures.

(4 marks)

15 *OAB* is the sector of a circle with centre *O*.

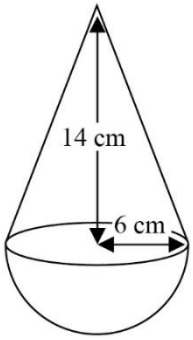


Calculate the area of sector *OAB.*

Give your answer correct to 1 decimal point.

(2 marks)

17 The diagram shows a solid made from a hemisphere and a cone.



Volume of a sphere = $\frac{4}{3}\pi r^3$

Volume of a cone = $\frac{1}{3}\pi r^2 h$

The radius of the hemisphere is 6 cm.

The radius of the base of the cone is 6 cm.

The vertical height of the cone is 14 cm

Calculate the **volume** of the solid. Give your answer correct to1 decimal place.

(3 marks)

Overall mark	**/23**