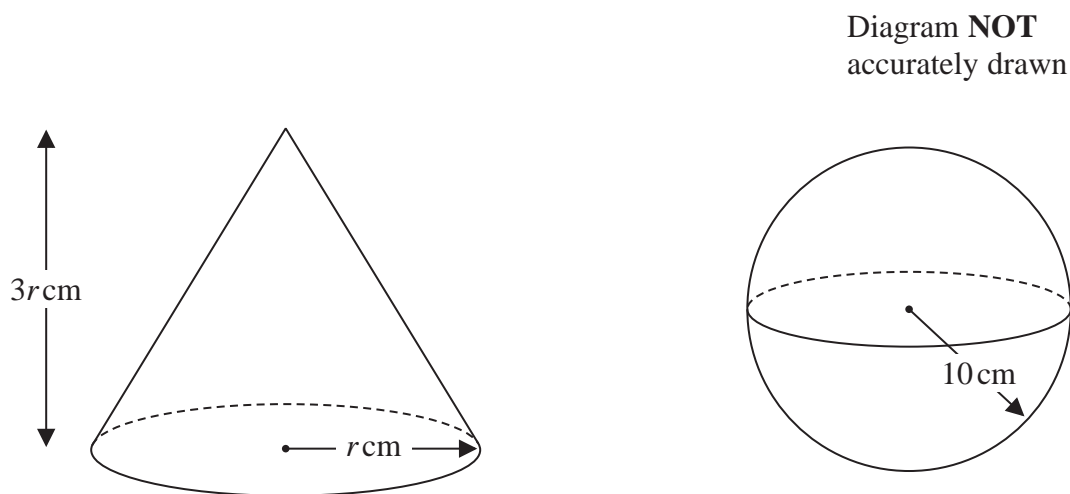


11



**Figure 4**

Figure 4 shows a solid right circular cone of radius  $r \text{ cm}$  and height  $3r \text{ cm}$  and a sphere of radius  $10 \text{ cm}$ .

The total surface area of the cone is equal to the surface area of the sphere.

(a) Calculate the value, to one decimal place, of  $r$

**(4)**

$$\left[ \begin{array}{l} \text{Curved surface area of cone} = \pi r l \\ \text{Surface area of sphere} = 4\pi r^2 \end{array} \right]$$



**DO NOT WRITE IN THIS AREA**

## This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

**Question 11 continues on page 34**



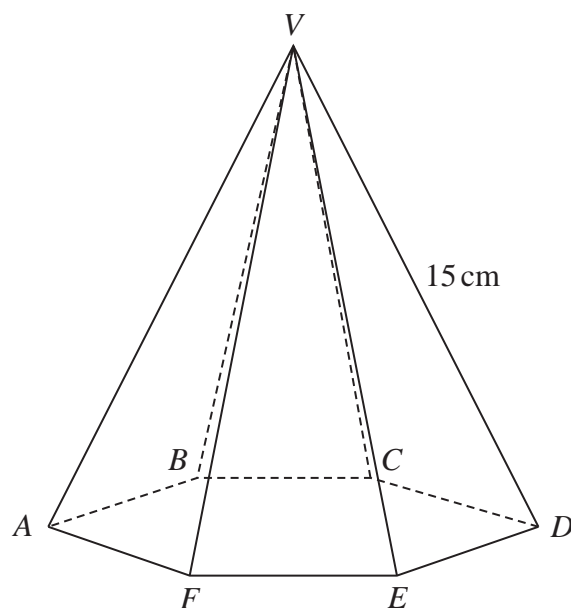


Diagram **NOT**  
accurately drawn

**Figure 5**

Figure 5 shows a right pyramid.

The base  $ABCDEF$  of the pyramid is a regular hexagon and the vertex  $V$  of the pyramid is such that

$AV = BV = CV = DV = EV = FV = 15 \text{ cm}$  and  $\angle AVD = 40^\circ$

(b) Calculate the volume, in  $\text{cm}^3$  to 3 significant figures, of the pyramid.

(5)

$$\left[ \begin{array}{l} \text{Area of triangle} = \frac{1}{2} ab \sin C \\ \text{Volume of pyramid} = \frac{1}{3} \times \text{base area} \times \text{height} \end{array} \right]$$



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

**Question 11 continued**

Handwriting practice area with horizontal dotted lines.



P 6 8 8 1 9 A 0 3 5 3 6

**Question 11 continued**

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(Total for Question 11 is 9 marks)

**TOTAL FOR PAPER IS 100 MARKS**

