1
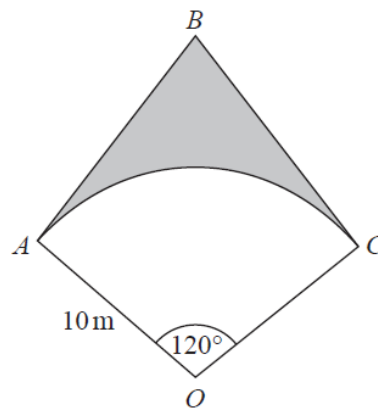

OAC is a sector of a circle, centre O, radius 10 m.

BA is the tangent to the circle at point A.
BC is the tangent to the circle at point C.
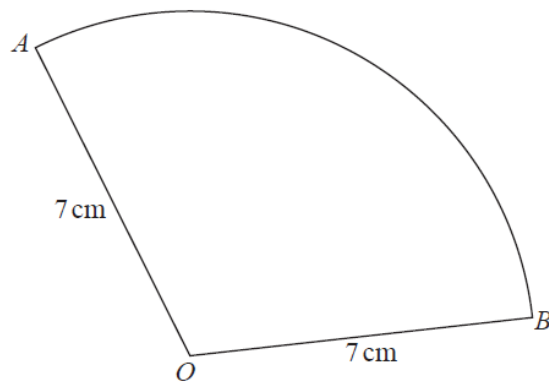
Angle $AOC = 120°$

Calculate the area of the shaded region.
Give your answer correct to 3 significant figures.

....m^2

(Total for Question   is 5 marks)

2 *OAB* is a sector of a circle with centre *O* and radius 7 cm.

The area of the sector is 40 cm²

Calculate the perimeter of the sector.
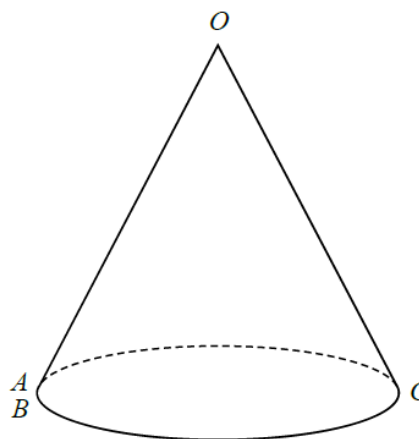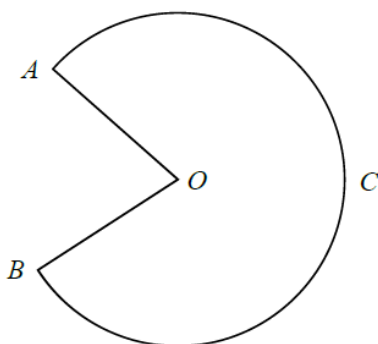Give your answer correct to 3 significant figures.

.... cm
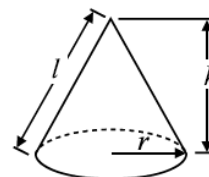
(Total for Question   is 4 marks)

3   The diagram shows a sector $OACB$ of a circle with centre O.
The point C is the midpoint of the arc AB.

The diagram also shows a hollow cone with vertex O.
The cone is formed by joining OA and OB.

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

Curved surface area of cone $= \pi r l$

The cone has volume $56.8\,\text{cm}^3$ and height $3.6\,\text{cm}$.

Calculate the size of angle AOB of sector $OACB$.
Give your answer correct to 3 significant figures.
You must show all your working.

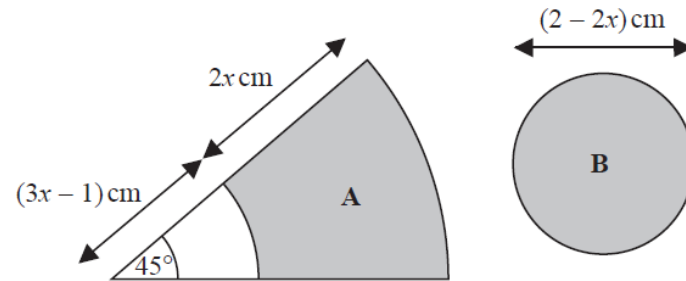**(Total for Question   is 5 marks)**

4   The diagram shows two shaded shapes, **A** and **B**.

Shape **A** is formed by removing a sector of a circle with radius $(3x - 1)$ cm from a sector
of the circle with radius $(5x - 1)$ cm.
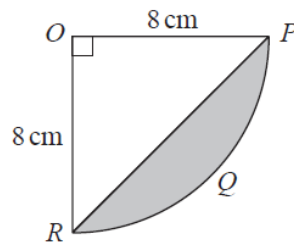Shape **B** is a circle of diameter $(2 - 2x)$ cm.

The area of shape **A** is equal to the area of shape **B**.

Find the value of x.
You must show all your working.

....

(Total for Question   is 5 marks)

5 The diagram shows a sector $OPQR$ of a circle, centre O and radius 8 cm.

OPR is a triangle.

Work out the area of the shaded segment PQR.
Give your answer correct to 3 significant figures.

.... cm^2

(Total for Question   is 4 marks)