8 **(a)**
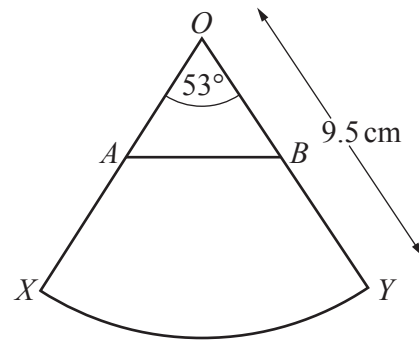

The diagram shows a sector *OXY* of a circle with centre *O* and radius 9.5 cm.
The sector angle is 53°.
A lies on *OX*, *B* lies on *OY* and *OA = OB*.

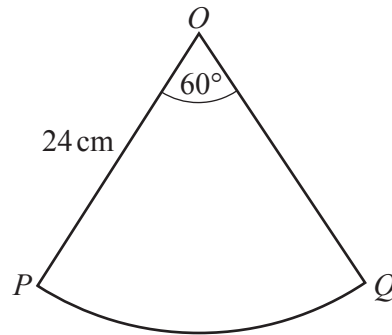**(i)** Show that the area of the sector is 41.7 cm², correct to 1 decimal place.

[2]

(ii) The area of triangle *OAB* is $\frac{1}{3}$ of the area of sector *OXY*.
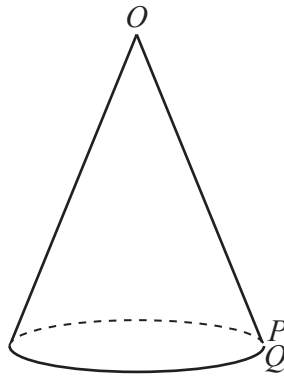
Calculate *OA*.

OA = ... cm [4]

(b)

The diagram shows a sector OPQ of a circle with centre O and radius 24 cm.
The sector angle is 60°.

A cone is made from this sector by joining OP to OQ.

Calculate the volume of the cone.

[The volume, V, of a cone with radius r and height h is $V = \frac{1}{3}\pi r^2 h$.]

.... cm^3 [6]