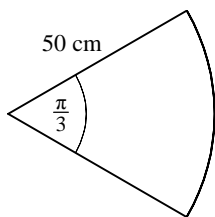


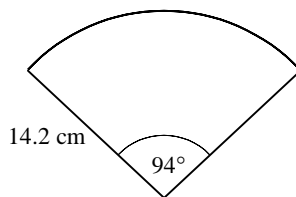


9 Find, in  $\text{cm}^2$  to 1 decimal place, the area of each of the following circular sectors.

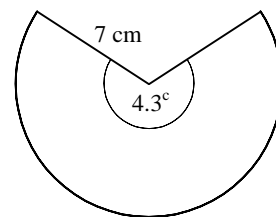
a



b



c



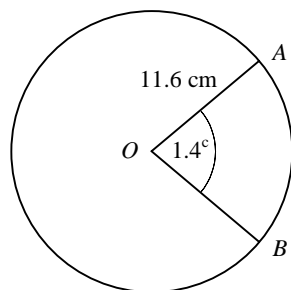
10  $PQ$  is an arc of a circle of radius 8 cm, centre  $O$ .

Given that arc  $PQ$  has length 12 cm, find

a the angle, in radians, subtended by  $PQ$  at  $O$ ,

b the area of sector  $OPQ$ .

11



The diagram shows a circle of radius 11.6 cm, centre  $O$ . The arc of the circle  $AB$  subtends an angle of 1.4 radians at  $O$ . Find, to 3 significant figures,

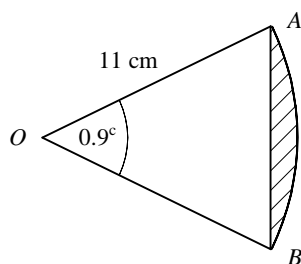
a the perimeter of the minor sector  $OAB$ ,

b the perimeter of the major sector  $OAB$ ,

c the area of the minor sector  $OAB$ ,

d the area of the major sector  $OAB$ .

12



The diagram shows a circular sector  $OAB$ . Find the area of

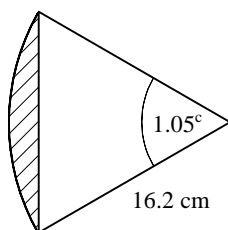
a the sector  $OAB$ ,

b the triangle  $OAB$ ,

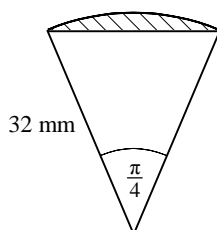
c the shaded segment.

13 Find the area of the shaded segment in each of the following circular sectors.

a



b



c

