

(1) Convert the following exact values into degrees:

- (a) $\frac{\pi}{3}$
 (b) $\frac{\pi}{4}$
 (c) $\frac{3\pi}{5}$
 (d) $\frac{7\pi}{12}$

(2) Convert the following into degrees giving your answers to 3 significant figures:

- (a) 2.13^c
 (b) 4.65^c
 (c) 5.1^c

(3) Convert the following values into radians giving your answers in exact form:

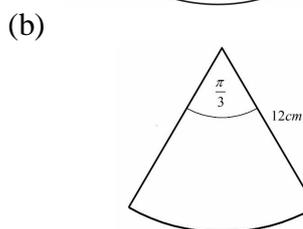
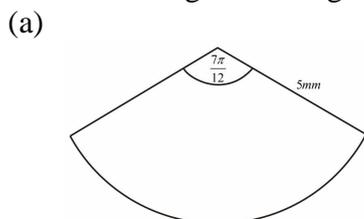
- (a) 180°
 (b) 135°
 (c) 270°
 (d) 60°

(4) Convert the following into radians giving your answers to 3 significant figures:

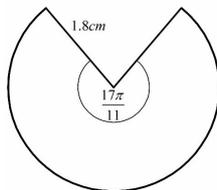
- (a) 134°
 (b) 97°
 (c) 12°

(For Q5 onwards all diagrams of sectors show the centre of the sector and 2 radii.)

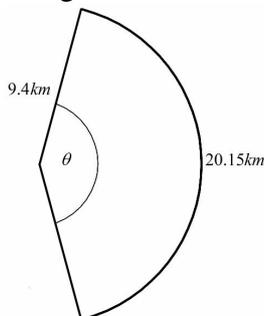
(5) Find the arc length for each sector below giving your answer to 3 significant figures:



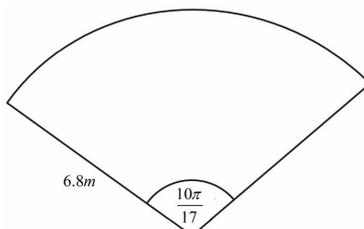
(c)



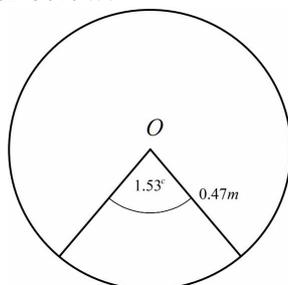
(6) Find the value of θ in the diagram below, given that the radius of the sector is 9.4km and the arc length is 20.15km



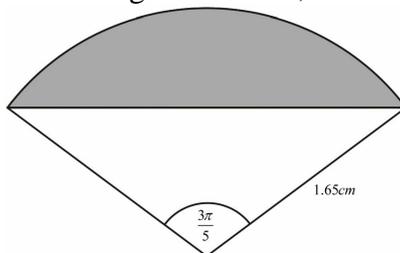
(7) (a) Find the area of the sector below:



(b) Find the area of the major sector below:

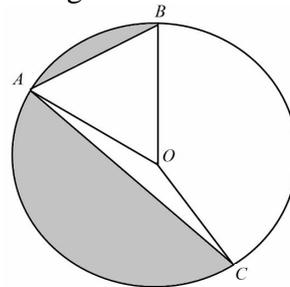


(8) (a) Find the area of the shaded segment below;



(b) A circle with centre O and radius 8m has the points A, B & C on its circumference. Given that $\angle AOB = 1.1^c$ and $\angle BOC = 2.05^c$, find the

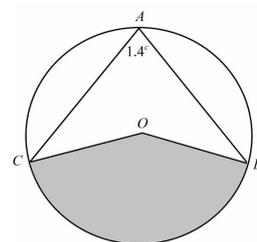
combined area of the two shaded segments shown below.



(9) A circle has centre O and radius 7.2cm . A, B and C lie on the circumference of the circle.

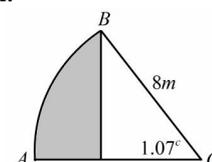
Given that $\angle CAB = 1.4^c$, find:

- (a) The length of the minor arc BC .
 (b) The area of shaded sector.



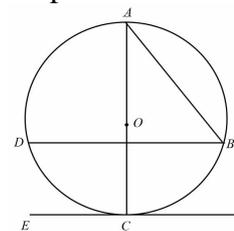
(10) The diagram below shows a sector with centre O and radius 8m . A line is drawn vertically from B to the line AO such that the two lines are perpendicular. Find:

- (a) The area of the shaded region.
 (b) The perimeter of the shaded region.



(11) Below is a picture of a circle with centre O and diameter $AC = 12\text{cm}$.

The line EF is a tangent and the line DB is parallel to EF .



Given that $\angle AOB = 2.01^c$ find:

- (a) The arc length BC .
 (b) The area of the $\triangle ODB$.