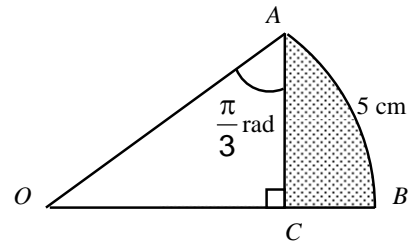
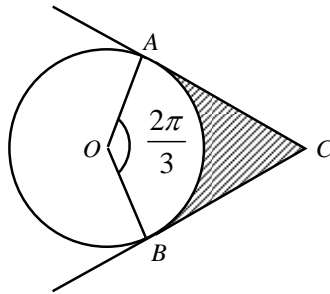


- Q1 OAB is a sector of the circle, centre O , with $\angle OAC = \frac{\pi}{3}$ radians and $\angle OCA$ is a right angle. Given that the arc AB has length 5 cm,
- Show that $OA = 9.55$ cm
 - Calculate the perimeter of the shaded region.
 - Express the area of the shaded region as a percentage of the area of the sector OAB .

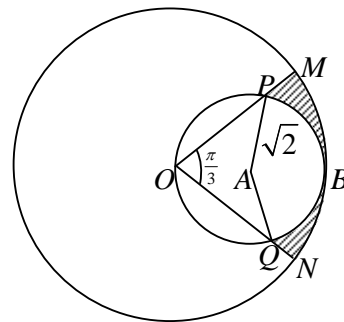


- Q2 AB is the diameter of a circle of radius 3 cm, centre O . AC is a chord of the circle making an angle of 30° with AB . Find the area of the shaded sector COB .

- Q3 In the diagram, O is the centre of a circle of radius 6 cm where AB is the arc. The tangents at points A and B on the circumference meet at C and the angle AOB is $\frac{2\pi}{3}$ radians. Find the area of the shaded region.



- Q4 The diagram shows two circles with centre O and A respectively, meeting at B . Given that $AP = \sqrt{2}$ cm and $\angle MON$ is $\frac{\pi}{3}$ radians, OPM and OQN are straight lines and $\angle MON$ is symmetrical about the line OAB , find
- the perimeter of the shaded region,
 - the area of the shaded region.



- Q5 A key hole is formed from a rhombus $PQRS$ by drawing two arcs, QVS and QWS , centres P and R respectively, as shown. PQ is 2 cm and $\angle QPS$ is 1.2 radians. Calculate
- the perimeter of the keyhole, ie. the section bounded by $QVSW$,
 - the area of the triangle PQS ,
 - the area of the sector $PQVS$,
 - the area of the keyhole.

