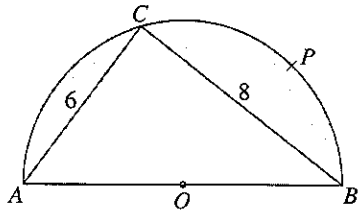
5. In the diagram, AB is a diameter of the semicircle with centre O, $AC = 6$ cm and $BC = 8$ cm. Find

(a) the radius of the circle,

(b) the area of the semicircle,

(c) the area of the shaded parts,

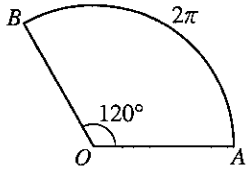
(d) the area of the segment BPC.



6. The diagram shows a sector OAB in which $\angle AOB = 120°$ and the length of the arc $AB = 2\pi$ cm. Find

(a) the length of the radius OA,

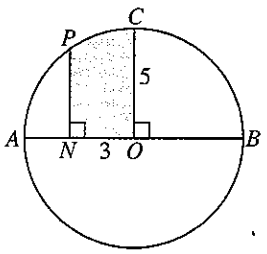
(b) the area of the sector OAB.



7. In the diagram, AB is a diameter of the circle with centre O and radius of 5 cm, $PN \perp AB$, $CO \perp AB$ and $ON = 3$ cm. Find

(a) $\angle COP$,

(b) the area of the shaded region $OCPN$.

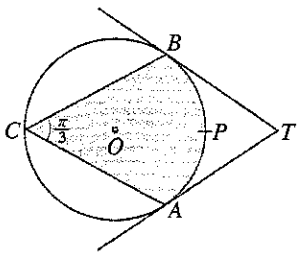


8. In the diagram, the circle has the centre at O and a radius of 6 cm. $\angle ACB = \frac{\pi}{3}$ radians. TA and TB are tangents to the circle at A and B respectively. Find

(a) the area of the sector $OAPB$,

(b) the area of the shaded region $APBC$,

(c) the area bounded by the arc APB and the two tangents TA and TB.



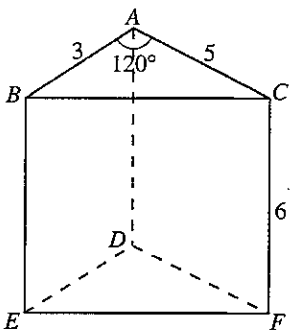
9. The diagram shows a triangular prism in which $AB = 3$ cm, $AC = 5$ cm, $CF = 6$ cm and $\angle BAC = 120°$. Find

(a) the length of BC,

(b) the area of $\triangle ABC$,

(c) the volume of the prism,

(d) the total surface area of the prism.



10. A wooden wedge is in the form of a triangular prism as shown in the diagram. $AC = 6$ cm, $AD = 9$ cm, $\angle BAC = 30°$ and $\angle ABC = 90°$. Find

(a) the lengths of BC and AB,

(b) $\angle BCD$,

(c) the area of $\triangle ABC$,

(d) the total surface area of the wedge,

(e) the volume of the wedge.