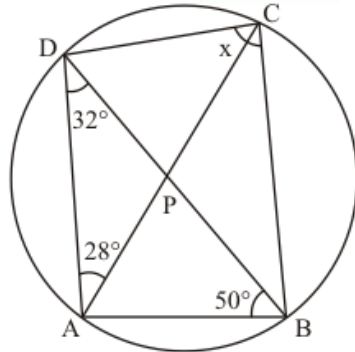




(ix) It is given that $\angle ABD = 50^\circ$



$$\angle DCA = \angle ABD = 50^\circ \dots\dots (1)$$

$$\angle ADB = \angle ACD = 32^\circ \dots\dots (2)$$

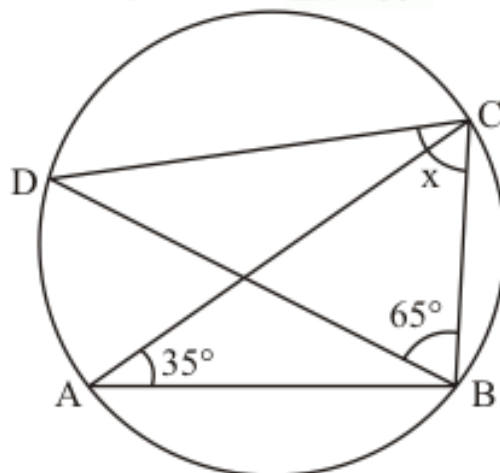
Because $\angle DCA$ and $\angle ABD$ are form on same segment AD of the circle.

Now from equation (1) and (2) we have

$$\begin{aligned}\angle DCB &= 50^\circ + 32^\circ \\ &= 82^\circ\end{aligned}$$

Hence $\boxed{x = 82^\circ}$

(x) It is given that $\angle A = 35^\circ$



$$\angle A = \angle D = 35^\circ \text{ (Because form on same segment)}$$

Now in $\triangle BCD$ we have

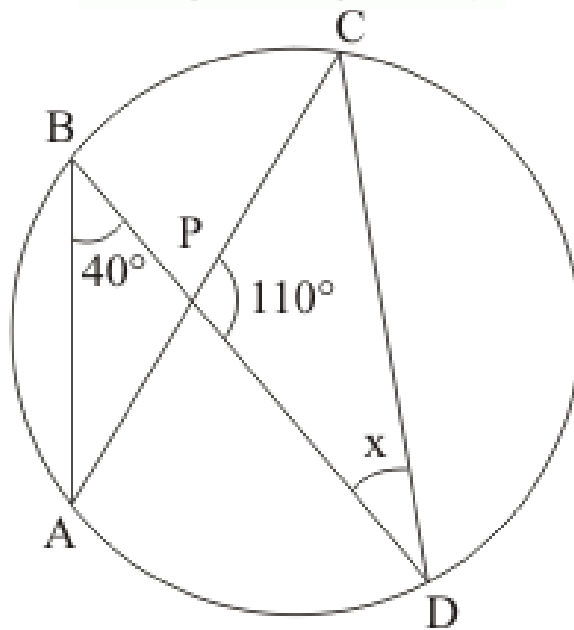
$$\angle D + \angle DBC + \angle DCB = 180^\circ$$

$$35^\circ + 65^\circ + \angle DCB = 180^\circ$$

$$\begin{aligned}\angle DCB &= 180^\circ - 100^\circ \\ &= 80^\circ\end{aligned}$$

Hence $\boxed{x = 80^\circ}$

(xi) $\angle ABC = \angle ACD = 40^\circ$



In $\triangle PCD$ we have

$$\angle CPD + \angle PCD + \angle PDC = 180^\circ$$

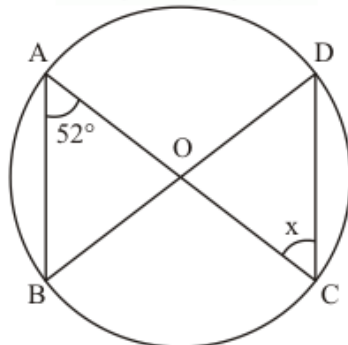
$$40^\circ + 110^\circ + \angle PDC = 180^\circ$$

$$\angle PDC = 180^\circ - 150^\circ$$

$$= 30^\circ$$

Hence $x = 30^\circ$

(xii) $\angle BAO = \angle CDO = 52^\circ$ (Angle form on same segment of triangle)



$\triangle DOC$ Is isosceles triangle

So $OD = OC$ (radius of triangle)

Then $\angle ODC = \angle OCD = 52^\circ$

Hence $x = 52^\circ$

***** END *****