



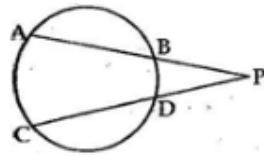
Exercise 11C

Question 14:

AB and CD are two chords of a circle which intersect each other at P, outside the circle. AB = 6 cm, BP = 2 cm and PD = 2.5 cm

Therefore, $AP \times BP = CP \times DP$

Or, $8 \times 2 = (CD + 2.5) \times 2.5$ [as $CP = CD + DP$]



Let $x = CD$

Thus, $8 \times 2 = (x + 2.5) \times 2.5$

$\Rightarrow 16 \text{ cm} = 2.5x + 6.25 \text{ cm}$

$\Rightarrow 2.5x = (16 - 6.25) \text{ cm}$

$\Rightarrow 2.5x = 9.75 \text{ cm}$

$\Rightarrow x = \frac{9.75}{2.5} = 3.9 \text{ cm}$

$\therefore x = 3.9 \text{ cm}$

Therefore, $CD = 3.9 \text{ cm}$

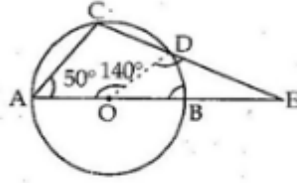
Question 15:

O is the centre of a circle having $\angle AOD = 140^\circ$ and $\angle CAB = 50^\circ$

$$(i) \quad \begin{aligned} \angle BOD &= 180^\circ - \angle AOD \\ &= 180^\circ - 140^\circ = 40^\circ \end{aligned}$$

$$OB = OD$$

$$\therefore \angle OBD = \angle ODB$$



In $\triangle OBD$, we have

$$\angle BOD + \angle OBD + \angle ODB = 180^\circ$$

$$\Rightarrow \angle BOD + \angle OBD + \angle OBD = 180^\circ \quad [\because \angle OBD = \angle ODB]$$

$$\Rightarrow 40^\circ + 2\angle OBD = 180^\circ \quad [\because \angle BOD = 40^\circ]$$

$$\Rightarrow 2\angle OBD = 180^\circ - 40^\circ = 140^\circ$$

$$\Rightarrow \angle OBD = \angle ODB = \frac{140}{2} = 70^\circ$$

$$\text{Also, } \angle CAB + \angle BDC = 180^\circ \quad [\because ABCD \text{ is cyclic}]$$

$$\Rightarrow \angle CAB + \angle ODB + \angle ODC = 180^\circ$$

$$\Rightarrow 50^\circ + 70^\circ + \angle ODC = 180^\circ$$

$$\Rightarrow \angle ODC = 180^\circ - 120^\circ = 60^\circ$$

$$\therefore \angle ODC = 60^\circ$$

$$\therefore \angle EDB = 180^\circ - (\angle ODC + \angle ODB)$$

$$= 180^\circ - (60^\circ + 70^\circ)$$

$$= 180^\circ - 130^\circ = 50^\circ$$

$$(ii) \quad \begin{aligned} \angle EBD &= 180^\circ - \angle OBD \\ &= 180^\circ - 70^\circ = 110^\circ \end{aligned}$$

***** END *****