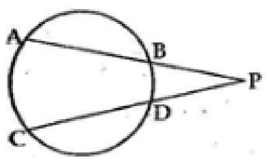
Exercise 11C

Question 14:

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

Therefore, AP x BP = CP x DP

Or, 8 x 2 = (CD + 2.5) x 2.5 cm [as CP = CD + DP]



Let x = CD

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

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

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

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

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

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

Therefore, CD = 3.9 cm

Question 15:

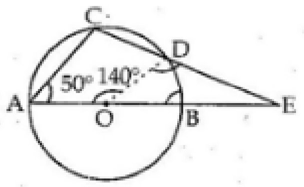
O is the centre of a circle having $\angle AOD = 140°$ and $\angle CAB = 50°$

(i) $\angle BOD = 180° - \angle AOD$

$= 180° - 140° = 40°$

$OB = OD$

$\therefore \angle OBD = \angle ODB$



In ΔOBD, we have

$\angle BOD + \angle OBD + \angle ODB = 180°$

$\Rightarrow \angle BOD + \angle OBD + \angle OBD = 180°$ $[\because \angle OBD = \angle ODB]$

$\Rightarrow 40° + 2\angle OBD = 180°$ $[\because \angle BOD = 40°]$

$\Rightarrow 2\angle OBD = 180° - 40° = 140°$

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

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

$\Rightarrow \angle CAB + \angle ODB + \angle ODC = 180°$

$\Rightarrow 50° + 70° + \angle ODC = 180°$

$\Rightarrow \angle ODC = 180° - 120° = 60°$

$\therefore \angle ODC = 60°$

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

$= 180° - (60° + 70°)$

$= 180° - 130° = 50°$

(ii) $\angle EBD = 180° - \angle OBD$

$= 180° - 70° = 110°$

*********** END **********