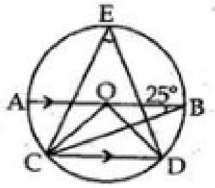
Exercise 11B

Question 8:



Join CO and DO, $\angle BCD = \angle ABC = 25^\circ$ [alternate interior angles]

The angle subtended by an arc of a circle at the centre is double the angle subtended by the arc at any point on the circumference.

$\therefore \angle BOD = 2\angle BCD$

$= 50^\circ$ $[\angle BCD = 25^\circ]$

Similarly,

$\angle AOC = 2\angle ABC$

$= 50^\circ$

AB is a straight line passing through the centre.

$\therefore \angle AOC + \angle COD + \angle BOD = 180^\circ$

$\Rightarrow 50^\circ + \angle COD + 50^\circ = 180^\circ$

$\Rightarrow \angle COD = 180^\circ - 100^\circ = 80^\circ$

$\therefore \angle CED = \frac{1}{2}\angle COD$

$= \frac{80^\circ}{2} = 40^\circ$

$\therefore \angle CED = 40^\circ$

Question 9:

(i) $\angle CED = 90^\circ$

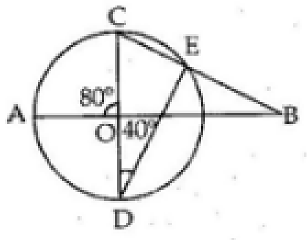
In $\triangle CED$, we have

$$\angle CED + \angle EDC + \angle DCE = 180^\circ$$

$\Rightarrow$ $90^\circ + 40^\circ + \angle DCE = 180^\circ$

$\therefore$ $\angle DCE = 180^\circ - 130^\circ$

$\angle DCE = 50^\circ$ ....(1)



(ii) $\angle AOC$ and $\angle BOC$ are linear pair.

$\therefore$ $\angle BOC = (180^\circ - 80^\circ) = 100^\circ$ .....(2)

$\therefore \angle ABC = 180^\circ - (\angle BOC + \angle DCE)$

$= 180^\circ - (100^\circ + 50^\circ)$ [from (1) and (2)]

$= 180^\circ - 150^\circ = 30^\circ$

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