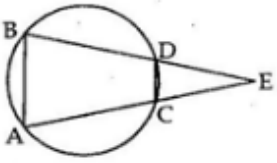
Exercise 11C

Question 28:

Given : AB and CD are two parallel chords of a circle BDE and ACE are straight lines which intersect at E.

If one side of a cyclic quadrilateral is produced then the exterior angle is equal to the interior opposite angle.

$\therefore$ Ext.$\angle EDC = \angle A$ and, Ext.$\angle DCE = \angle B$



Also, $AB \parallel CD$

$\Rightarrow \quad \angle EDC = \angle B$

and $\quad \angle DCE = \angle A$

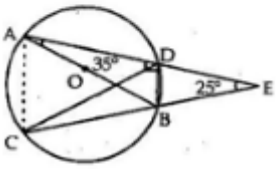
$\therefore \quad \angle A = \angle B$

$\therefore$ ΔAEB is isosceles.

Question 29:

AB is a diameter of a circle with centre O. ADE and CBE are straight lines, meeting at E, such that $\angle BAD = 35°$ and $\angle BED = 25°$.

Join BD and AC.



(i) Now, $\angle BDA = 90° = \angle EDB$ [angle in a semi circle]

$\Rightarrow \quad \angle EBD = 180° - (\angle EDB + \angle BED)$

$= 180° - (90° + 25°)$

$= 180° - 115° = 65°$

$\therefore \quad \angle DBC = (180° - \angle EBD)$

$= 180° - 65° = 115°$

$\therefore \quad \angle DBC = 115°$

(ii) Again, $\angle DCB = \angle BAD$ [angle in the same segment]

Since, $\angle BAD = 35°$

$\therefore \quad \angle DCB = 35°$

(iii) $\angle BDC = 180° - (\angle DBC + \angle DCB)$

$= 180° - (\angle DBC + \angle BAD)$

$= 180° - (115° + 35°)$

$= 180° - 150° = 30°$

$\therefore \quad \angle BDC = 30°$

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