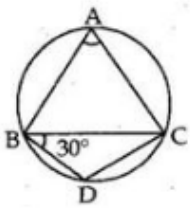
Exercise 11C

Question 6:

$BD = DC$

$\therefore \quad \angle BCD = \angle CBD = 30°$



In ΔBCD, we have

$\angle BCD + \angle CBD + \angle CDB = 180°$

$\Rightarrow \quad 30° + 30° + \angle CDB = 180°$

$\Rightarrow \quad \angle CDB = 180° - 60°$

$= 120°$

The opposite angles of a cyclic quadrilateral are supplementary.

ABCD is a cyclic quadrilateral and thus,

$\angle CDB + \angle BAC = 180°$

$= 180° - 120° [\because \angle CDB = 120°]$

$= 60°$

$\therefore \quad \angle BAC = 60°$

Question 7:

Angle subtended by an arc is twice the angle subtended by it on the circumference in the alternate segment.

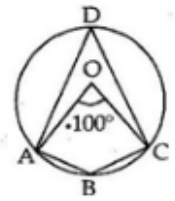
Here arc ABC makes $\angle AOC = 100°$ at the centre of the circle and $\angle ADC$ on the circumference of the circle

$\therefore \angle AOC = 2\angle ADC$

$\Rightarrow \angle ADC = \frac{1}{2}(\angle AOC)$

$\Rightarrow \quad = \frac{1}{2} \times 100° \quad [\angle AOC = 100°]$

$\Rightarrow \angle ADC = 50°$



The opposite angles of a cyclic quadrilateral are supplementary,

ABCD is a cyclic quadrilateral and thus,

$$\angle ADC + \angle ABC = 180°$$
$$= 180° - 50° \quad [\because \angle ADC = 50°]$$
$$= 130°$$

$\therefore \quad \angle ABC = 130°$

$\therefore \angle ADC = 50° \quad$ and $\quad \angle ABC = 130°$

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