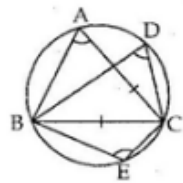Exercise 11C

Question 8:

$\triangle$ ABC is an equilateral triangle.

$\therefore$ Each of its angle is equal to 60°

$\Rightarrow \angle BAC = \angle ABC = \angle ACB = 60°$

(i) Angles in the same segment of a circle are equal.

$\therefore \angle BDC = \angle BAC$

$\qquad = 60°$ [$\because \angle BAC = 60°$]

$\Rightarrow \angle BDC = 60°$

(ii) The opposite angles of a cyclic quadrilateral are supplementary

ABCE is a cyclic quadrilateral and thus,

$\qquad \angle BAC + \angle BEC = 180°$

$\qquad\qquad \angle BEC = 180° - 60°$ [$\because \angle BAC = 60°$]

$\qquad\qquad\qquad = 120°$
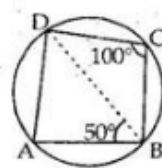
$\Rightarrow \qquad\qquad \angle BEC = 120°$

Question 9:

ABCD is a cyclic quadrilateral.

$\therefore \qquad \angle A + \angle C = 180°$ $\qquad \begin{bmatrix} \text{opp. angle of a cyclic quadrilateral} \\ \text{are supplementary} \end{bmatrix}$

$\Rightarrow \qquad \angle A + 100° = 180°$

$\Rightarrow \qquad \angle A = 180° - 100° = 80°$

Now in $\triangle$ABD, we have

$\qquad \angle A + \angle ABD + \angle ADB = 180°$

$\Rightarrow \qquad 80° + 50° + \angle ADB = 180°$

$\Rightarrow \qquad\qquad \angle ADB = 180° - 130° = 50°$

$\therefore \qquad\qquad \angle ADB = 50°$

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