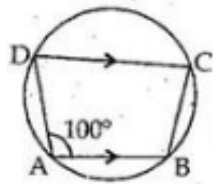




Exercise 11C

Question 3:

In cyclic quadrilateral ABCD, $AB \parallel DC$ and $\angle BAD = 100^\circ$



- (i) $\angle BCD + \angle BAD = 180^\circ$
 $\Rightarrow \angle BCD + 100^\circ = 180^\circ$
 $\Rightarrow \angle BCD = 180^\circ - 100^\circ = 80^\circ$
(ii) Also, $\angle ADC = \angle BCD = 80^\circ$
 $\therefore \angle ADC = 80^\circ$
(iii) $\angle ABC = \angle BAD = 100^\circ$
 $\therefore \angle ABC = 100^\circ$

Question 4:

Take a point D on the major arc CA and join AD and DC

$$\therefore \angle 2 = 2\angle 1$$

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

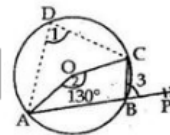
$$\therefore 130^\circ = 2\angle 1$$

$$\Rightarrow \angle 1 = 65^\circ \quad \dots\dots\dots(i)$$

$$\angle PBC = \angle 1$$

[\therefore exterior angle of a cyclic quadrilateral interior opposite angle]

$$\therefore \angle PBC = 65^\circ$$



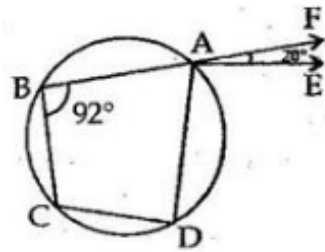
Question 5:

ABCD is a cyclic quadrilateral

$$\therefore \angle ABC + \angle ADC = 180^\circ$$

$$\Rightarrow 92^\circ + \angle ADC = 180^\circ$$

$$\Rightarrow \angle ADC = 180^\circ - 92^\circ = 88^\circ$$



Also, $AE \parallel CD$

$$\therefore \angle EAD = \angle ADC = 88^\circ$$

$$\therefore \angle BCD = \angle DAF$$

[\therefore exterior angle of a cyclic quadrilateral = int. opp. angle]

$$\therefore \angle BCD = \angle EAD + \angle EAF$$

$$= 88^\circ + 20^\circ \quad [\because \angle FAE = 20^\circ (\text{given})]$$

$$= 108^\circ$$

$$\therefore \angle BCD = 108^\circ$$

***** END *****