CIRCLES

CYCLIC QUADRILATERAL

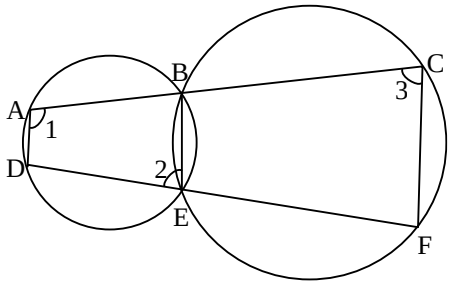
EXERCISE

Q.1 If a side of a cyclic quadrilateral is produced, then prove that the exterior angle is equal to the interior opposite angle.

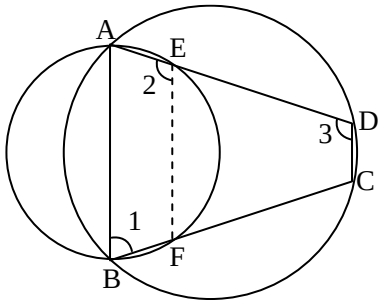
Q.2 In figure ABCD is a cyclic quadrilateral; O is the centre of the circle. If $\angle BOD = 160º$, find the measure of $\angle BPD$.

Q.3 In figure ΔABC is an isosceles triangle with
$AB = AC$ and m $\angle ABC = 50º$. Find m $\angle BDC$ and m $\angle BEC$

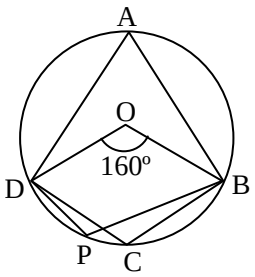
Q.4 In fig. A, B, C and D, E, F are two sets of collinear points, Prove that AD || CF.



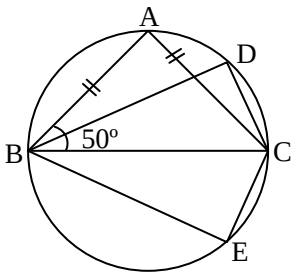
Q.5 In fig. ABCD is a cyclic quadrilateral. A circle passing through A and B meets AD and BC in the points E and F respectively. Prove that
EF || DC.



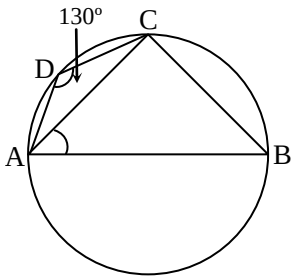
Q.6 In fig. ABCD is a cyclic quadrilateral; O is the centre of the circle. If $\angle BOD = 160º$, find the measure of $\angle BPD$.



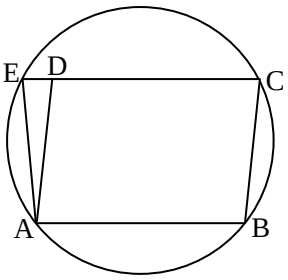
Q.7 In fig. ΔABC is an isosceles triangle with $AB = AC$ and m $\angle ABC = 50º$. Find m $\angle BDC$ and m $\angle BEC$



Q.8 In fig. ABCD is a cyclic quadrilateral whose side AB is a diameter of the circle through A, B, C, D. If $(\angle ADC) = 130º$, Find $\angle BAC$.



Q.9 In the given figure, ABCD is a parallelogram. The circle through A, B, C intersects CD produced at E. Prove that $AD = AE$.

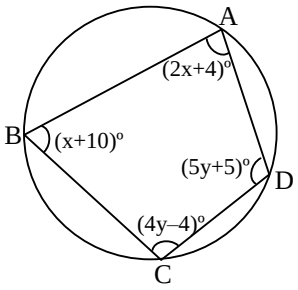


Q.10 Prove that the quadrilateral formed by angle bisectors of a cyclic quadrilateral is also cyclic.

Q.11 From the given figure, find out the values of x and y, when

$\angle A = (2x + 4)^\circ$, $\angle B = (x + 10)^\circ$

$\angle C = (4y - 4)^\circ$ and $\angle D = (5y + 5)^\circ$



ANSWER KEY

2. $\angle BCD = 100^\circ = \angle BPD$ $\left[\begin{array}{l}\because \angle BPD \text{ and } \angle BCD \text{ are angles} \\ \quad \text{in the same segment} \\ \therefore \angle BCD = \angle BPD\end{array}\right]$

3. $m\angle BDC = 80^\circ$ and $m\angle BEC = 100^\circ$

6. 100°

7. 80º, 100º

8. 40º

11. 40, 25