

**THE VILLAGE INTERNATIONAL SCHOOL**  
**QUESTION BANK – MATHEMATICS**

**GRADE: 9**

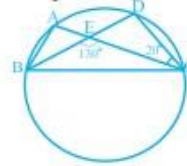
**CHAPTER: CIRCLES**

**MCQ:-**

**Q1.** In Fig. ,A, B, C and D are four points on a circle. AC and BD intersect at a point E such that  $\angle BEC=130^\circ$

And  $\angle ECD = 20^\circ$ . Value of  $\angle BAC$  is.

- (a)  $50^\circ$       (b)  $40^\circ$       (c)  $90^\circ$       (d)  $110^\circ$



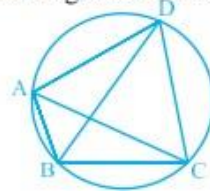
**Answer:-** (d)

**Short answer type question:-**

**Q1.** In Fig, ABCD is a cyclic quadrilateral in which AC and BD are its diagonals. If  $\angle DBC = 55^\circ$  and  $\angle BAC = 45^\circ$ , find  $\angle BCD$ .

**Solution :**  $\angle CAD = \angle DBC = 55^\circ$

(Angles in the same segment)Therefore,



$\angle DAB = \angle CAD + \angle BAC$   
 $= 55^\circ + 45^\circ = 100^\circ$  But  $\angle DAB + \angle BCD = 180^\circ$   
 (Opposite angles of a cyclic quadrilateral) So,  
 $\angle BCD = 180^\circ - 100^\circ = 80^\circ$

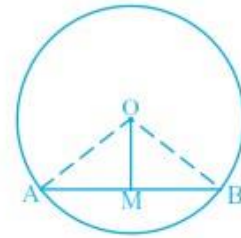
**Long answer type question:-**

**Q.1** The line drawn through the centre of a circle to bisect a chord is perpendicular to the chord. Let AB be a chord of a circle with centre O and O is joined to the mid-point M of AB. You have to prove that  $OM \perp AB$ . Join OA and OB . In triangles OAM and OBM,

- OA = OB (Radii)
- AM = BM (given)
- OM = OM (Common)

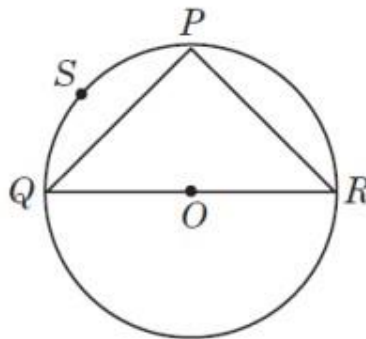
Therefore,  $\triangle OAM \cong \triangle OBM$  (By SSS rule)

This gives  $\angle OMA = \angle OMB = 90^\circ$  (CPCT)



**Case Study question :- Q 1.**

Ankit visited in a mall with his father. He sees that three shops are situated at P, Q, R as shown in the figure from where they have to purchase things according to their need. Distance between shop P and Q is 8 m, that of between shop Q and R is 10 m and between shop P and R is 6 m.



- (i) Find the radius of the circle.
  - (a) 5 m                      (b) 7 m                      (c) 14 m                      (d) 8 m
- (ii) (ii) Measure of  $\angle QPR$  is
  - (a)  $60^\circ$                       (b)  $90^\circ$                       (c)  $120^\circ$                       (d)  $180^\circ$
- (iii) (iv) Length of the longest chord of the circle is
  - (a) 6 m                      (b) 8 m                      (c) 10 m                      (d) 24 m
- (iv) (v) In figure, PSQP is known as
  - (a) Major segment                      (b) Minor segment                      (c) Major sector                      (d) Minor sector

**Answer:-** (i) (a) (ii) (a) (iii) (c) (iv) (b)