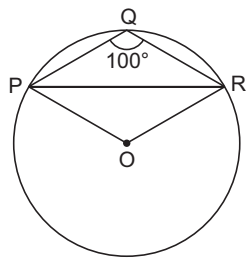
WORKSHEET 10

CHAPTER 10 – CIRCLES

1. Given three collinear points, then the number of circles which can be drawn through three points are
   (*a*) one (*b*) two (*c*) four (*d*) none of these

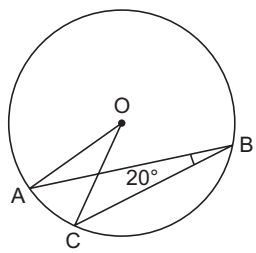
2. In the given figure, the value of ∠OPR is
   (*a*) 55°
   (*b*) 60°
   (*c*) 10°
   (*d*) 160°



3. Diagonals of a cyclic quadrilateral are the diameters of that circle, then quadrilateral is a
   (*a*) rectangle (*b*) square (*c*) rhombus (*d*) parallelogram

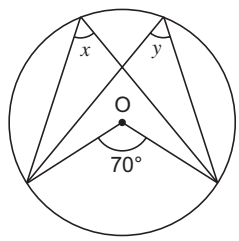
4. AD is the diameter of a circle and AB is a chord. If AD = 34 cm, AB = 30 cm, the distance of AB from the centre of the circle is
   (*a*) 20 cm (*b*) 17 cm (*c*) 8 cm (*d*) 4 cm

5. In the given figure, if ∠ABC = 20°, then ∠AOC is equal to
   (*a*) 40°
   (*b*) 60°
   (*c*) 50°
   (*d*) 20°

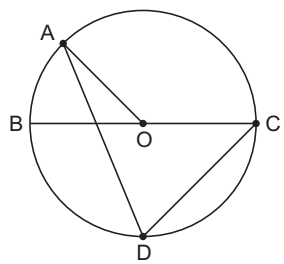


6. The region between a chord and either of the arcs is called
   (*a*) an arc (*b*) a sector (*c*) a segment (*d*) a semicircle

7. In the given figure, value of *y* is
   (*a*) $x = y$
   (*b*) 35°
   (*c*) $35° + x$
   (*d*) $70° - x$



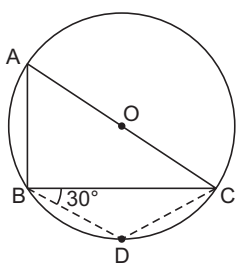
8. In the given figure, BC is a diameter of the circle and ∠BAO = 60°, then ∠ADC is equal to
   (*a*) 45°
   (*b*) 60°
   (*c*) 30°
   (*d*) 110°



9. ABCD is a quadrilateral such that A is the centre of the circle passing through B, C and D. Prove that $\angle CBD + \angle CBD = \frac{1}{2}\angle BAD$.

10. In the given figure, BD = DC and ∠DBC = 30°. What is the measure of ∠BAC if O is the centre of the circle?

11. Prove that the circle drawn on any equal side of an isosceles triangle as diameter bisects the base.



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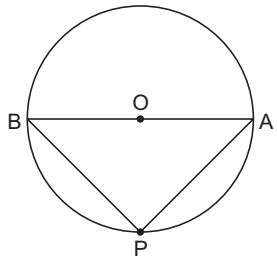
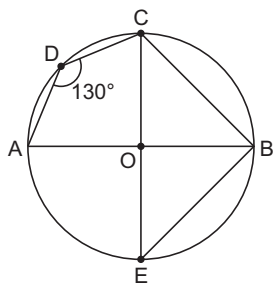
12. In the given figure, O is the centre of the circle and AP = BP. Calculate ∠PAB and ∠POA.



13. ABCD is a ||gm. The circle through A, B and C intersects CD produced at E. If AB = 10 cm, BC = 8 cm, CE = 14 cm, find AE.

14. Two equal chords AB and CD of a circle when produced intersect at a point P. Prove that PB = PD.

15. In the given figure, ∠ADC = 130° and chord BC = chord BE. Find ∠CBE.

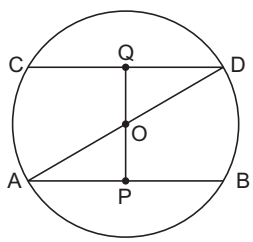


16. Two circles intersect each other at points A and B. AD and AQ are diameters of the two circles respectively. If ∠APB = 40° and ∠AQB = 70°, find ∠PAB and ∠QAB.

17. In a cyclic quadrilateral PQRS, if ∠P – ∠R = 50°, find ∠P.

18. AB and AC are two chords of a circle of radius r such that AB = 2AC. If p and q are the distances of AB and AC from the centre. Prove that $4q^2 = p^2 + 3r^2$.

19. In the given figure, AB || CD. AD is a diameter of the circle whose centre is O. Prove that AB = CD.



20. Prove that the mid-point of the hypotenuse of a right triangle is equidistant from its vertices.

ANSWERS

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1. (*d*) none of these **2.** (*c*) 10° **3.** (*a*) rectangle **4.** (*c*) 8 cm **5.** (*a*) 40° **6.** (*c*) a segment

7. (*b*) 35° **8.** (*b*) 60° **10.** ∠BAC = 60° **12.** 45°, 90° **13.** 8 cm

15. 100° **16.** ∠PAB = 50°, ∠QAB = 20° **17.** ∠P = 115°