BHARATH COACHING CENTRE

10^{th} CBSE	Circles	Total: 40
Maths	SA – 2	Time: 1.30 hrs

SECTION – A 5 x 1 = 5

1. If a line touches the circle at only one print, then it is known as:
2. In a circle of radius 4cm, tangents should be drawn from the end points of a chord so that the angle between the tangents is 120°,then the length of the chord should be:
3. If two tangents inclined at an angle of 60° are drawn to a circle of radius 3 cm, the length of each tangent is equal to:
4. PQ is a tangent to a circle with centre O at point P. if ΔOPQ is an isosceles triangle, then ∠OQP is
5. Two concentric circles of radii a and b, where a > b, are given. The length of chord of the larger circle which touches the smaller circle is:

SECTION – B 5 x 2 = 10

6. Prove that the tangent at any point of a circle is perpendicular to the radius through the point of contact.
7. AD and AC are tangents to the circle with centre O at D and C, respectively. If ∠DAC = 70°, find $\angle BCA, \angle BDC \ \& \ \angle BCO$ (see fig - 1).
8. In the figure AD = 8cm, AC = 6cm and TB is the tangent at B to the circle with centre O. find OT, if BT is 4cm(see fig - 2).
9. Prove that the line segment joining the point of contact of two parallel tangents to a circle is a diameter of the circle.
10. Two tangents PA and PB are drawn to a circle with centre O, such that ∠APB = 120°. Prove that OP =2 AP.

SECTION – C 5 x 3 = 15

11. Prove that the angle between the two tangents to a circle drawn from an external point, is supplementary to the angle subtended by the line segment joining the points of contact at the centre.
12. In the given fig - 3, OP is equal to the diameter of the circle. Prove that ABP an equilateral triangle.
13. In Fig XY and X' Y ' are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting XY at A and X ' Y ' at B. Prove that ∠AOB = 90°.
14. From an external point P, two tangents PA and PB are drawn to a circle with centre O. if OP = 2 OA, then show that triangle APB is equilateral.
15. In the fig, two circles with centre A and B touch each other externally. PM = 15cm is tangent to circle with centre A and QN = 13 cm is tangent to circle with centre B from external points P and Q. if PA = 17cm and BQ = 12cm, find the distance between the centres A and B of circles.

SECTION – D 2 x 5 = 10

16. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of lengths 8 cm and 6 cm respectively (see Fig). Find the sides AB and AC.
17. Two circles with centres O and O' of radii 3 cm and 4 cm respectively intersect at two points P and Q such that OP and O'P are tangents to the two circles. Find the length of the common chord PQ.

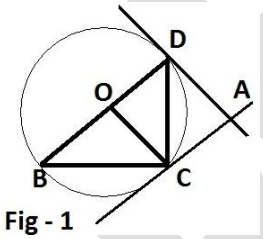


Fig - 1

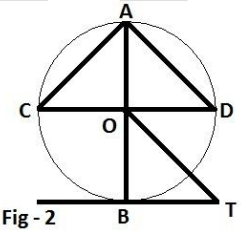


Fig - 2

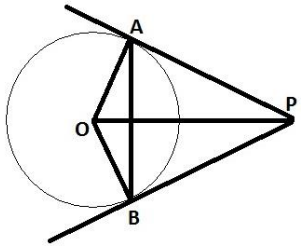
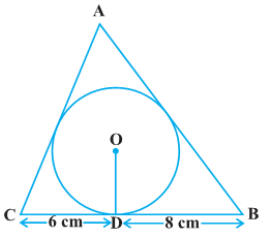


Fig - 3



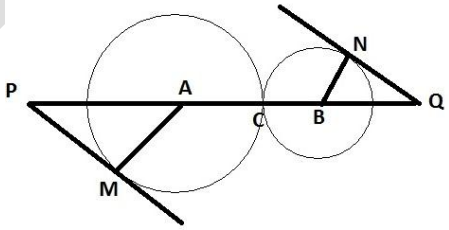


Fig - 4