Chapter 10

ASSIGNMENT

OBJECTIVE ASSIGNMENT - 10.1

1. The length of the tangent drawn from a point 8 cm away from the centre of a circle of radius 6 cm is
   (A) $\sqrt{7}$ cm (B) $\sqrt[2]{7}$ cm (C) 10 cm (D) 5 cm

2. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q, so that OQ = 12 cm. Length of PQ is :
   (A) 12 cm (B) 13 cm (C) 8.5 cm (D) $\sqrt{119}$ cm

3. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of 80^0 then $\angle POA$ is equal to
   (A) 50^0 (B) 60^0 (C) 70^0 (D) 80^0

4. Two circle touch each other externally at C and AB is a common tangent to the circle. Then $\angle ACB =$
   (A) 60^0 (B) 45^0 (C) 30^0 (D) 90^0

5. ABC is a right angled triangle, right angled at B such that BC = 6 am and AB = 8 cm. A circle with centre O is inscribed in ΔABC. The radius of the circle is
   (A) 1 cm (B) 2 cm (C) 3 cm (D) 4 cm

SUBJECTIVE DPP - 10.2

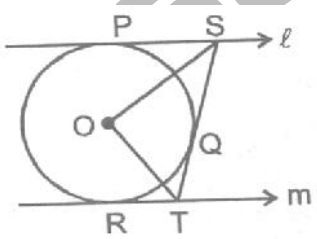
1. ABCD is a quadrilateral such than $\angle D = 90^0$. A circle C (O, r) touches the sides AB, BC, CD and DA at P, Q, R and S respectively. If BC = 38 cm, CD = 25 cm and BP = 27 cm, find r.

2. Two concentric circles are of radius 5 cm and 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.

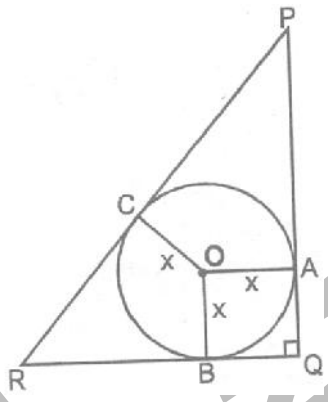
3. In a circle of radius 5 cm, AB and AC are two chords, such that AB = AC = 6 cm. Find the length of chord BC.

4. The radius of the incircle of a triangle is 4 cm and the segments into which one side is divided by the point of contact are 6 cm and 8 cm. Determine the other two sides of the triangle.

5. In **figure,** ℓ and m are two parallel tangents at P and R. The tangent at Q makes an intercept ST between ℓ and m. Prove that $\angle SOT = 90^0$



6. PQR is a right angled triangle with PQ = 12 cm and QR = 5 cm. A circle with centre O and radius x is inscribed in ΔPQR. Find the value of x.

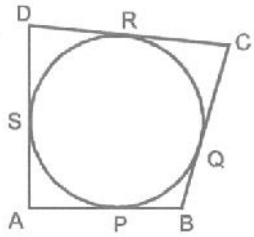


7. From an external point P, two tangents PA and PB are drawn to the circle with centre O. Prove that OP is the perpendicular dissector of AB.

8. Two tangent TP and TQ are drawn to a circle with centre O from an external point T. Prove that $\angle PTQ = 2\angle OPQ$.

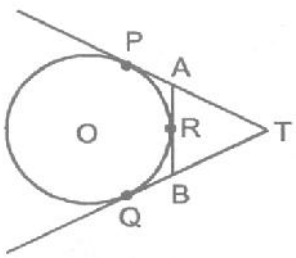
9. A circle touches the sides of a quadrilateral ABCD at P, Q, R, S respectively. Show that the angles subtended at the centre by a pair of opposite sides are supplementary.

10. In **figure**, a circle touches all the four sides of a quadrilateral ABCD with AB= 6 cm, BC = 7 cm and CD = 4 cm. Find AD. **[CBSE - 2002]**

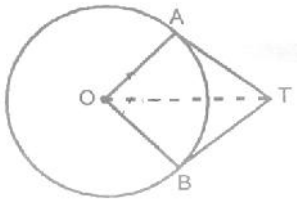


11. Prove that the lengths of the tangents drawn from an external point to a circle are equal.
Using the above, do the following :
In figure, TP and TQ are tangents from T to the circle with centre O and R is any point on the circle. If AB is a tangent to the circle at R, prove that

TA + AR = TB + BR. **[CBSE - 208]**



12. In figure, if $\angle ATO = 40^0$, find $\angle AOB$ **[CBSE - 2008]**



13. In figure OP is equal to diameter of the circle. Prove that ABP is an equilateral triangle. **[CBSE - 2008]**