SINGLE OPTION CORRECT

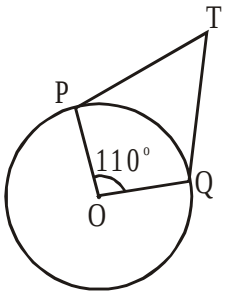
1. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the center O at a point Q so that OQ = 12 cm. Length PQ is

   (A) 12 cm (B) 13 cm (C) 8.5 cm (D) $\sqrt{119}$ cm

2. From a point Q, the length of the tangent to a circle 24 cm and the distance of Q from the centre is 25 cm. The radius of the circle is

   (a) 7 cm (b) 12 cm (c) 15 cm (d) 24.5 cm

3. In figure, if TP and TQ are the two tangents to a circle with center O. So that $\angle POQ = 110^o$; then $\angle PTQ$ is equal to



   (a) 60^o (b) 70^o (c) 80^o (d) 90^o

4. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80^o, then $\angle POA$ is equal to

   (a) 50^o (b) 60^o (c) 70^o (d) 80^o

5. The length of the tangent from a point A at a circle, of radius 3 cm, is 4 cm. The distance of A from the centre of the circle is

   (a) $\sqrt{7}$ cm (b) 7 cm (c) 5 cm (d) 25 cm

6. PQ is a tangent to a circle with centre O at the point P. If ΔOPQ is an isosceles triangle, then $\angle OQP$ is equal to

   (a) 30^o (b) 45^o (c) 60^o (d) 90^o

7. Two circles touch each other externally at C and AB is a common tangent to the circles. Then $\angle ACB =$

   (a) 60^o (b) 45^o (c) 30^o (d) 90^o

8. ABC is a right angled triangle, right angled at B such that BC = 6 cm 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

9. PQ is a tangent drawn from a point P to a circle with centre O and QOR is a diameter of the circle such that $\angle POR = 120^{o}$, then $\angle OPQ$ is

(a) 60^{o} (b) 45^{o} (c) 30^{o} (d) 90^{o}

10. AB and CD are two common tangents to circles which touch each other at C. If D lies on AB such that CD = 4 cm, then AB is equal to

(a) 4 cm (b) 6 cm (c) 8 cm (d) 12 cm

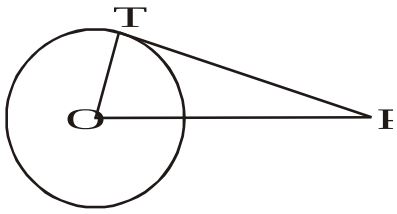
11. In a circle of radius 7 cm, tangent PT is drawn from a point P such that PT = 24 cm. If O is the centre of the circle, then length of OP is

(a) 30 cm (b) 28 cm (c) 14 cm (d) 25 cm

12. A point P is 26 cm away from the centre of a circle and the length of tangent drawn from P to the circle is 24 cm. The radius of the circle is

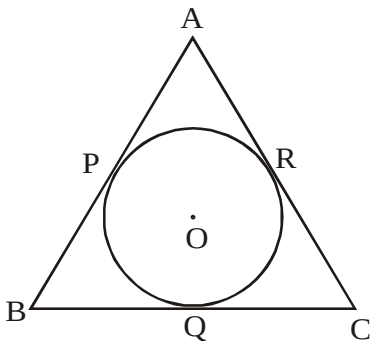
(a) 8 cm (b) 10 cm (c) 12 cm (d) 14 cm

13. In the given figure, PT is a tangent to the circle with centre O. If OT = 6 cm and OP = 10 cm, then the length of tangent PT is



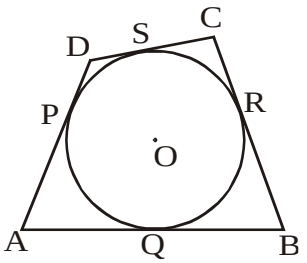
(a) 8 cm (b) 12 cm (c) 10 cm (d) 16 cm

14. In the given figure, ΔABC is circumscribed touching the circle at P, Q, R. If AP = 4 cm, BP = 6 cm, AC = 12 cm and BC = x cm. Then x = ?



(a) 10 cm (b) 6 cm (c) 14 cm (d) 18 cm

15. In the given figure, quadrilateral ABCD is circumscribed touching the circle at P, Q, R and S. If AP = 5 cm, BC = 7 cm, and CS = 3 cm, length AB = ?



(a) 10 cm (b) 8 cm (c) 12 cm (d) 9 cm

SUBJECTIVE PROBLEMS

1. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.

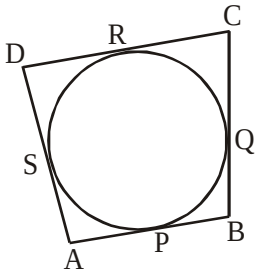
2. Prove that the perpendicular at the point of contact to the tangent to a circle passes through the centre.

3. The length of a tangent from a point A at distance 5 cm from the centre of the circle is 4 cm. Find the radius of the circle.

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

5. A quadrilateral ABCD is drawn to circumscribe a circle in figure. Prove that AB + CD = AD + BC

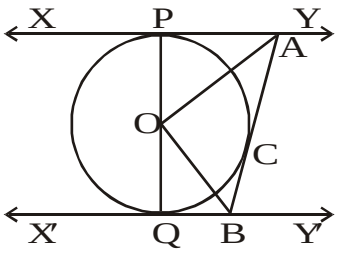
6. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line-segment joining the points of contact at the centre.



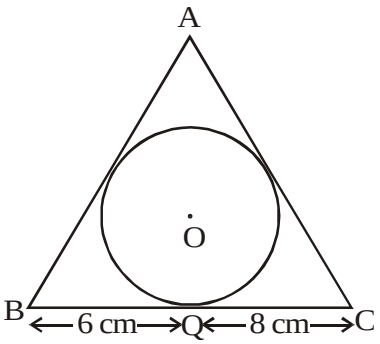
7. Prove that the parallelogram circumscribing a circle is a rhombus.

8. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.

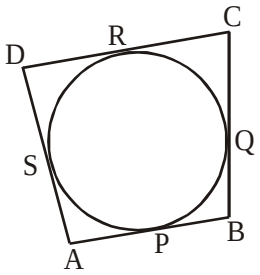
9. In figure, XY and X'Y' are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting XY at A and X'Y' at B. Prove that $\angle AOB = 90^{o}$.



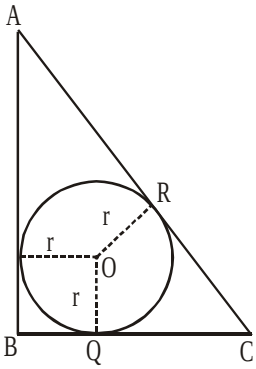
10. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of lengths 6 cm and 8 cm respectively in figure. Find the sides AB and AC.



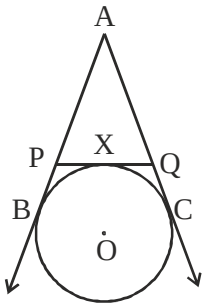
11. In figure, a circle touches all the four sides of a quadrilateral ABCD with AB = 6 cm, BC = 7 cm and CD = 4 cm. Find AD.



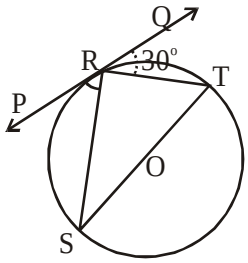
12. In figure, ABC is a right angled triangle, right angle at B such that BC = 6 cm and AB = 8 cm. Find the radius of its incircle.



13. If AB, AC and PQ are tangents in figure, And AB = 5 cm, find the perimeter of ΔAPQ.



14. In figure, PQ is tangent at a point R of the circle with centre O. If $\angle TRQ = 30^{\circ}$, find the $m\angle PRS$.



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

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ANSWER KEY & SOLUTION

SINGLE OPTION CORRECT

1.	2.	3.	4.
5.			

MULTI OPTIONS CORRECT

1.	2.	3.	4.

INTEGER TYPE

1.	2.	3.	4.

SUBJECTIVE

1.	2.