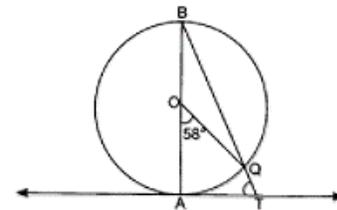


Board – CBSE

Class – 10th

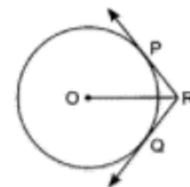
Topic – Circle

1. In the figure, AB is the diameter of a circle with centre O and AT is a tangent. If $\angle AOQ = 58^\circ$, find $\angle ATQ$

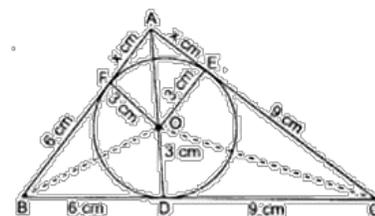


2. From a point T outside a circle of centre O, tangents TP and TQ are drawn to the circle. Prove that OT is the right bisector of the line segment PQ.

3. In the figure, two tangents RQ and RP are drawn from an external point R to the circle with centre O. If $\angle PRQ = 120^\circ$, then prove that $OR = PR + RQ$

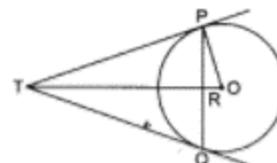


4. In the figure, a triangle ABC is drawn to circumscribe a circle of radius 3 cm, such that the segments BD and DC are respectively of lengths 6 cm and 9 cm. If the area of ΔABC is 54 cm^2 , then find the lengths of sides AB and AC



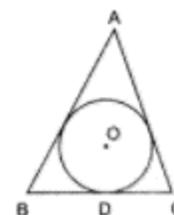
5. Prove that the tangent at any point of a circle is perpendicular to the radius through the point of contact

6. In the figure, PQ is a chord of length 16 cm, of a circle of radius 10 cm. The tangents at P and Q intersect at a point T. Find the length of TP.



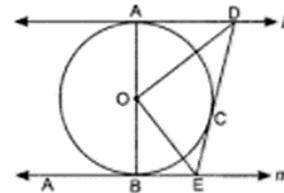
7. Prove that the length of the tangents drawn from an external point to a circle is equal.

8. In the figure, a triangle ABC is drawn to circumscribe a circle of radius 4 cm, such that the segments BD and DC are of lengths 8 cm and 6 cm respectively. Find the sides AB and AC.



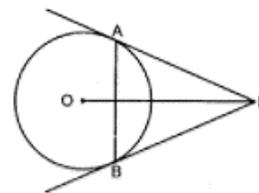
9. Prove that the tangent drawn at the mid-point of an arc of a circle is parallel to the chord joining the endpoints of the arc.

10. In the given figure l, m are two parallel tangents to the circle with center O , touching the circle at A and B respectively. Another tangent at C intersects the line l at D and at E . prove that $\angle DOE = 90^\circ$



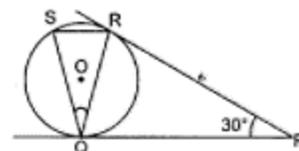
11. Prove that a parallelogram circumscribing a circle is a rhombus

12. In the given figure, PA and PB are two tangents drawn from an external point P to a circle with center O . Prove that OP is the right bisector of line segment AB

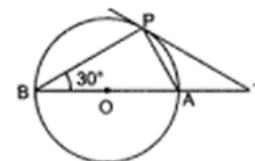


13. A quadrilateral is drawn to circumscribe a circle. Prove that the sums of opposite sides are equal.

14. In the figure, tangents PQ and PR are drawn from an external point P to a circle with center O , such that $\angle RPQ = 30^\circ$. A chord RS is drawn parallel to the tangent PQ . Find $\angle RQS$



15. In the figure, O is the center of the circle and TP is the tangent to the circle from an external point T .
If $\angle PBT = 30^\circ$, prove that $BA: AT = 2:1$



16. Prove that the lengths of tangents drawn from an external point to a circle are equal.

17. Two concentric circles are of radii 7 cm and r cm respectively, where $r > 7$.
A chord of the larger circle, of length 48 cm, touches the smaller circle. Find the value of r .

18. If the radii of the two concentric circles are 15cm and 17cm, then find the length of each chord of one circle which is tangent to one other.

Ans. 16cm

19. If two tangents making an angle of 120° with each other are drawn to a circle of radius 6cm, then find the angle between the two radii, which are drawn to the tangents.

Ans. 60°

20. PQ is a chord of a circle and R is a point on the minor arc.
If PT is a tangent at point P such that $\angle QPT = 60$ then find $\angle PRQ$.

Ans. 120°

21. If a tangent PQ at a point P of a circle of radius 5cm meets a line through the center O at a point Q such that $OQ = 12$ cm then find the length of PQ.

Ans. $\sqrt{119}$ cm

22. If the angle between two radii of a circle is 130 , then find the angle between the tangents at the end of the radii.

Ans. 50°

23. ABCD is a quadrilateral. A circle centered at O is inscribed in the quadrilateral. If $AB = 7$ cm, $BC = 4$ cm, $CD = 5$ cm then find DA.

Ans. 8 cm

24. If PA and PB are two tangents drawn to a circle with center O, from an external point P such that $PA=5$ cm and $\angle APB = 60$, then find the length of the chord AB.

Ans. 5cm

25. CP and CQ are tangents from an external point C to a circle with center O. AB is another tangent that touches the circle at R and intersects PC and QC at A and B respectively. If $CP = 11$ cm and $BR = 4$ cm, then find the length of BC.

Ans. 7cm

26. AB is a chord of length 9.6cm of a circle with center O and radius 6cm. If the tangents at A and B intersect at point P then find the length PA.

Ans. 8cm

27. Prove that the length of tangents drawn from an external point to a circle is equal. Hence, find BC, if a circle is inscribed in a triangle ABC touching AB, BC & CA at P, Q & R respectively, having AB=10 cm, AR=7 cm & RC=5 cm.

Ans. 8cm