

Circles

<1M>

1. At how many points does a tangent intersect a circle?

- (A) One
- (B) Two
- (C) Three
- (D) Infinite

2. From a point P a tangent is drawn to a circle of diameter 48 cm. The point P is situated at a distance of 25 cm from the center O of the circle. Then the length of the tangent is:

- (A) 7 cm
- (B) 14 cm
- (C) 16 cm
- (D) 24 cm

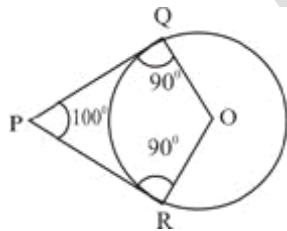
3. Two tangents are drawn at the ends of a diameter of a circle. What is the distance between the tangents if the area of the circle is 154 cm^2 ?

- (A) 7 cm
- (B) 14 cm
- (C) 21 cm
- (D) 28 cm

4. From a point Q the length of the tangent to a circle is 24 cm and the radius of the circle is 7 cm. Then the distance of Q from the center is:

- (A) 12 cm
- (B) 12.5 cm
- (C) 25 cm
- (D) 50 cm

5. If two tangents from point P are drawn to a circle at points Q and R, and they are inclined at 100° , then $\angle QOR$ is equal to (where O is the center of the circle)



- (A) 70°
- (B) 80°
- (C) 90°
- (D) 100°

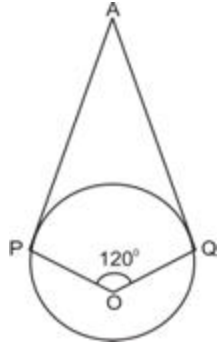
6. From a point Q the length of the tangent to a circle is 24 cm and the distance of Q from the center is 25 cm. Then the area of the circle is:

- (A) 7π
- (B) 14π
- (C) 49π
- (D) None of these

7. Two concentric circles are of radii 25 cm and 24 cm. Then what is the length of the chord of the larger circle which touches the smaller circle?

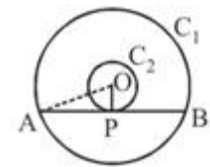
- (A) 7 cm
- (B) 14 cm
- (C) 21 cm
- (D) 28 cm

8. In the given figure, if AP and AQ are two tangents to a circle with center O such that $\angle POQ = 120^\circ$. Then $\angle PAQ$ is equal to



- (A) 60°
- (B) 70°
- (C) 80°
- (D) 100°

9. If in the given figure radius of smaller and larger circles be 4 and 5 cm. Find the length of chord AB.



- (A) 6 cm
- (B) 8 cm
- (C) 10 cm
- (D) 12 cm

10. From a point A the length of the tangent to a circle is 8 cm and distance of A from the center is 10 cm. The diameter of circle is:

- (A) 6 cm
- (B) 12 cm
- (C) 14 cm
- (D) 16 cm

11. Two equal circles of radius r intersect such that each passes through the center of the other. The length of the common chord is .

- (A) \sqrt{r}
- (B) $r\sqrt{2}$
- (C) $r\sqrt{3}$
- (D) $\frac{r\sqrt{3}}{2}$

12. The common point of a tangent to circle and the circle is called:

- (A) Centre
- (B) Normal point
- (C) Common point
- (D) Point of contact

13. A tangent AB at point A of a circle of radius 6 cm meets a line through center O at a point such that $OB = 8$ cm. The length of AB is:

- (A) 12 cm
- (B) 10 cm
- (C) 8 cm
- (D) $2\sqrt{7}$ cm

14. A line intersect the circle in two point is called:

- (A) Tangent
- (B) Secant
- (C) Normal
- (D) None of these

15. A circle may have:

- (A) 2 tangents
- (B) 4 tangents
- (C) 8 tangents
- (D) Infinite tangents

16. How many parallel tangent a circle can have?

- (A) 2
- (B) 4
- (C) 5
- (D) 6

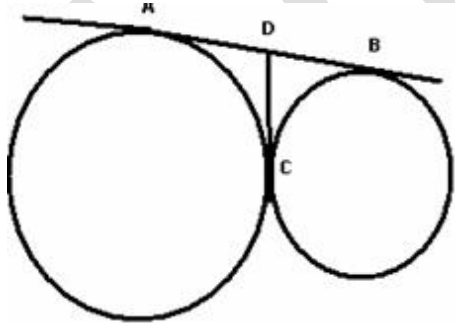
17. How many tangents can be drawn from a point lying outside to circle?

- (A) one
- (B) two
- (C) four
- (D) 5 infinite

18. The tangents drawn at the ends of a diameters of a circle are:

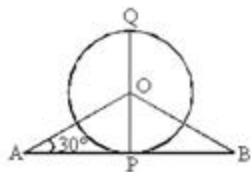
- (A) normal
- (B) parallel to each other
- (C) equal to each other
- (D) none of these

19. In the given Fig., AB and CD are two common tangents to the two touching circles. If DC = 4 cm then AB is equal to



- (A) 4cm
- (B) 6cm
- (C) 8 cm
- (D) 12 cm

20. In the given figure O is the center of circle and AB is tangent to circle. If PQ = 10 cm and $\angle PAQ = 30^\circ$ Then length of AB is



- (A) 5 cm
- (B) 10 cm
- (C) $\frac{20}{\sqrt{3}}$ cm

(D) 15 cm

21. The lengths of two tangents from an external point to a circle are:

- (A) equal
- (B) unequal
- (C) double
- (D) none of these

22. Choose the correct statement/statements:

- (A) Parallelogram circumscribing a circle is a rhombus.
- (B) Tangents drawn at the ends of a diameter of a circle are equal.
- (C) In two concentric circles the chord of the larger circle, which touches the smaller circle is bisected at the point of contact.
- (D) All are correct

23. 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

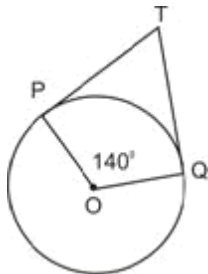
24. A tangent PQ at a point P of a circle of radius 6 cm meets a line through center O at a point Q so that OQ = 12 cm, length PQ is

- (A) 12 cm
- (B) 6 cm
- (C) $6\sqrt{3}$ cm
- (D) 18 cm

25. If tangent PA and PB from a point P to a circle with center O are inclined to each other at an angle 30° then $\angle AOB$ is equal to:

- (A) 50°
- (B) 60°
- (C) 70°
- (D) 150°

26. In the figure shown below if TP and TQ are two tangents to a circle with centre O so that $\angle POQ = 140^\circ$ then $\angle PTQ$ is equal to



- (A) 40°
- (B) 60°
- (C) 80°
- (D) 100°

27. In a circle with center O, AB and CD are two diameters perpendicular to each other. The length of the chord AC is .

- (A) 2AB
- (B) $\sqrt{2}$ AB

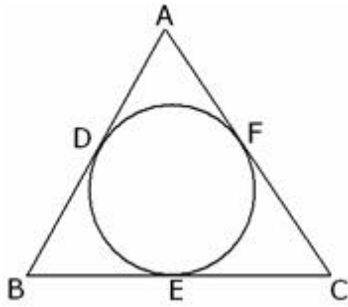
- (C) $\frac{1}{2}$ AB
 (D) $\frac{1}{\sqrt{2}}$ AB

28. The tangent to a circle is to the radius through the point of contact:

- (A) parallel
 (B) coincident
 (C) perpendicular
 (D) none of these

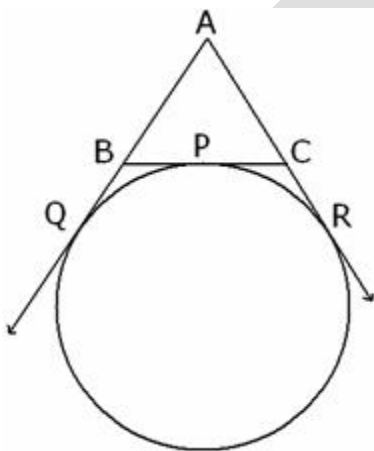
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29. In figure if $AB=AC$, prove that $BE=EC$.



30. A point P is 13 cm from the centre of the circle. The length of the tangent drawn from P to the circle is 12 cm. Find the radius of the circle.

31. In fig. AQ and AR are tangents from A to the circle with centre O. P is a point on the circle. Prove that $AB+BP=AC+CP$



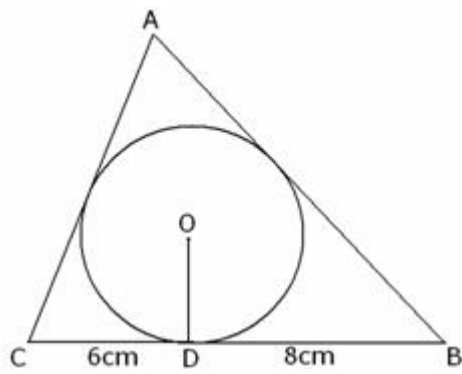
32. Prove that the segment joining the points of contact of two parallel tangents passes through the centre.

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

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

35. 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. Find the sides AB and AC.



36. A circle is touching the side BC of $\triangle ABC$ at P and touching AB and AC produced at Q and R respectively. Prove that $AQ = \frac{1}{2}(\text{Perimeter of } \triangle ABC)$

37. If all the sides of a parallelogram touch a circle, show that the parallelogram is a rhombus.

38. In fig. ABC is a right-angled at B such that BC=6 cm and AB=8 cm. Find the radius of its incircle.

