

GRADE 10TH MATHS
CHAPTER 10

Circles PYQs

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- 1) In Figure-2 PQ is tangent to the circle with centre at O, at the point B. If $\angle AOB = 100^\circ$, then $\angle ABP$ is equal to

- (A) 50°
(B) 40°
(C) 60°
(D) 80°

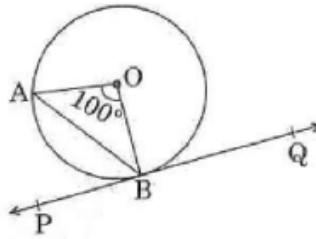


Figure-2

- 2) In Figure-3. From an external point P, two tangents PQ and PR are drawn to a circle of radius 4 cm with centre O. If $\angle QPR = 90^\circ$, then length of PQ is

- (A) 3cm
(B) 4cm
(C) 2cm
(D) $2\sqrt{2}$ cm

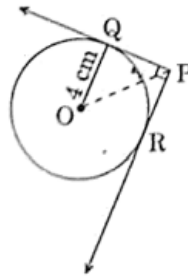


Figure-3

- 3) In Figure 6, a quadrilateral ABCD is drawn to circumscribe a circle.

Prove that

$$AB + CD = BC + AD.$$

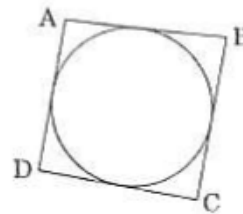


Figure-6

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- 4) In Figure-7, find the perimeter of $\triangle ABC$, if $AP = 12$ cm.

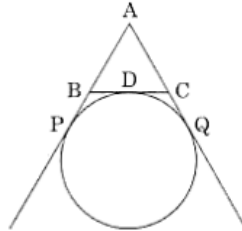


Figure-7

- 5) In Fig. 2, PQ is a chord of length 8 cm of a circle of radius 5 cm and centre O. The tangents at P and Q intersect at point T. Find the length of TP. [3]

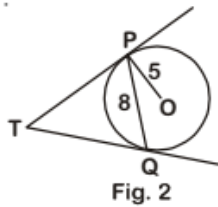
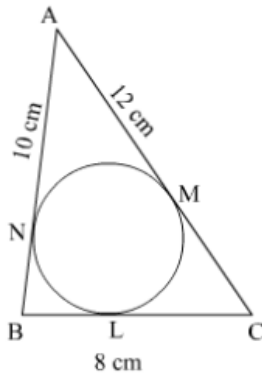


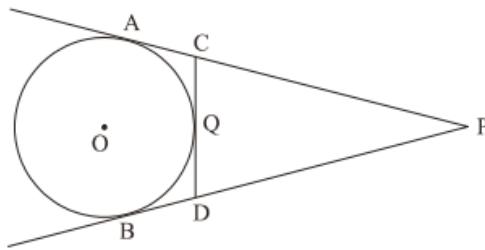
Fig. 2

- 6) In Fig. 4, a circle is inscribed in a $\triangle ABC$ having sides $BC = 8$ cm, $AB = 10$ cm and $AC = 12$ cm. Find the lengths BL , CM and AN .



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- 7) In the given figure, PA and PB are tangents to the circle from an external point P. CD is another tangent touching the circle at Q. If $PA = 12$ cm, $QC = QD = 3$ cm, then find $PC + PD$.



- 8) In Fig. 3, AP and BP are tangents to a circle with centre O, such that $AP = 5$ cm and $\angle APB = 60^\circ$. Find the length of chord AB.

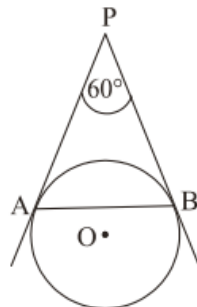


Fig. 3

- 9) In Fig. 8, O is the centre of a circle of radius 5 cm. T is a point such that $OT = 13$ cm and OT intersects circle at E. If AB is a tangent to the circle at E, find the length of AB, where TP and TQ are two tangents to the circle.

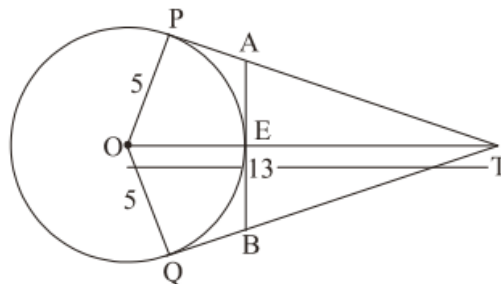
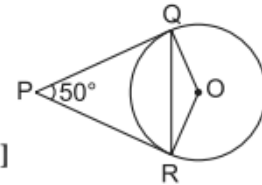


Fig. 8

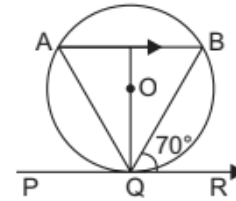
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9. PQ is a tangent drawn from a point P to a circle with centre O and QOR is a diameter of the circle such $\angle POR = 120^\circ$, then $\angle OPQ$ is
 (a) 30° (b) 60° (c) 45° (d) 35°

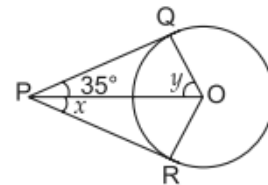
10. If PQ and PR are tangents to the circle with centre O such that $\angle QPR = 50^\circ$, then $\angle OQR$ is equal to
 (a) 25° (b) 30°
 (c) 40° (d) 50° [CBSE SP 2012]



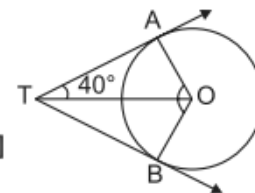
11. If PQR is a tangent to a circle at Q whose centre is O, AB is a chord parallel to PR and $\angle BQR = 70^\circ$, then $\angle AQB$ is equal to
 (a) 20° (b) 40°
 (c) 35° (d) 45° [CBSE SP 2012]



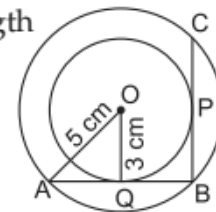
12. PQ and PR are tangents from an external point P, to a circle with centre O. If $\angle QPO = 35^\circ$, then measures of x and y are
 (a) $x = 30^\circ, y = 60^\circ$ (b) $x = 35^\circ, y = 55^\circ$
 (c) $x = 40^\circ, y = 50^\circ$ (d) $x = 45^\circ, y = 45^\circ$



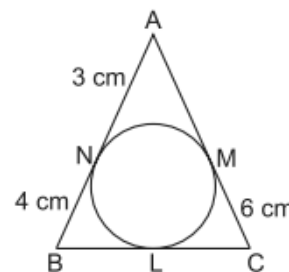
13. In the given figure, if $\angle ATO = 40^\circ$, then the measure of $\angle AOB$ is
 (a) 80° (b) 100°
 (c) 90° (d) 120° [CBSE 2008]



14. Two concentric circles of radii 3 cm and 5 cm are given. The length of chord BC which touches the inner circle at P is equal to
 (a) 6 cm (b) 4 cm
 (c) 10 cm (d) 8 cm



15. In the given figure $\triangle ABC$ is circumscribing a circle. Then the length of BC is
 (a) 7 cm
 (b) 8 cm
 (c) 9 cm
 (d) 10 cm

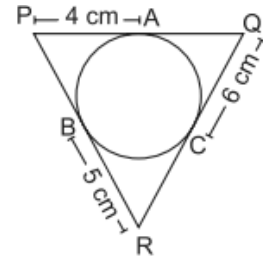


[CBSE SP 2012]

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16. The perimeter of ΔPQR in the given figure is

- (a) 30 cm
- (b) 15 cm
- (c) 45 cm
- (d) 60 cm



17. In the given figure, CP and CQ are tangents to a circle with centre O. ARB is another tangent touching the circle at R. If $CP = 11$ cm, $BC = 7$ cm, length of BR is

- (a) 1 cm
- (b) 2 cm
- (c) 4 cm
- (d) 3 cm



18. In the figure, a circle touches the side DF of ΔEDF at H and touches ED and EF produced at K and M respectively. If $EK = 9$ cm, then perimeter of ΔEDF (in cm) is

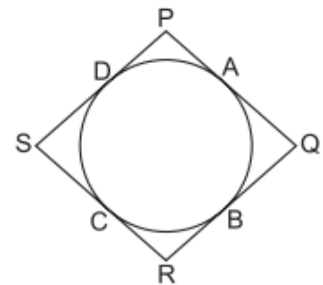
- (a) 18
- (b) 13.5
- (c) 12
- (d) 9



[CBSE SP 2012]

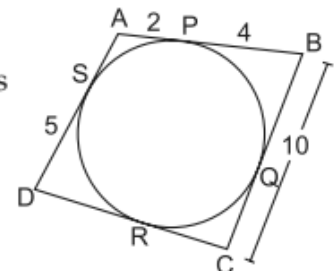
19. Quadrilateral PQRS circumscribes a circle as shown in the figure. The side of the quadrilateral which is equal to $PD + QB$ is

- (a) PS
- (b) PR
- (c) PQ
- (d) QR



20. In the given figure, perimeter of quadrilateral ABCD is

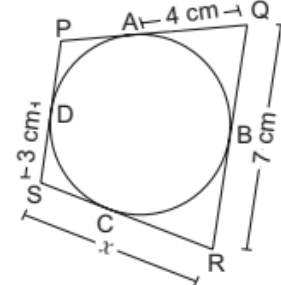
- (a) 36 units
- (b) 48 units
- (c) 28 units
- (d) 34 units



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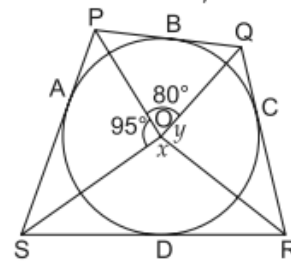
21. In the given figure, if $AQ = 4$ cm, $QR = 7$ cm, $DS = 3$ cm, then x is equal to

- (a) 6 cm
- (b) 8 cm
- (c) 11 cm
- (d) 10 cm



22. In the given figure, if quadrilateral PQRS circumscribes a circle, then

- (a) $x = 95^\circ$, $y = 95^\circ$
- (b) $x = 100^\circ$, $y = 85^\circ$
- (c) $x = 110^\circ$, $y = 90^\circ$
- (d) $x = 85^\circ$, $y = 90^\circ$



23. From a point A which is at a distance of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents AB and AC to the circle are drawn. Then the area of quadrilateral ABOC is

- (a) 120 cm^2
- (b) 50 cm^2
- (c) 60 cm^2
- (d) 80 cm^2

24. The maximum number of common tangents that can be drawn to two circles intersecting at two distinct points is

- (a) 1
- (b) 2
- (c) 3
- (d) 4

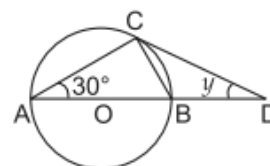
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For Standard Level

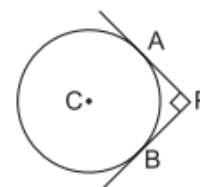
25. If two tangents inclined at 60° are drawn to a circle of radius 3 cm, then length of each tangent is equal to
 (a) $3\sqrt{3}$ cm (b) 3 cm (c) $3\sqrt{2}$ cm (d) $2\sqrt{3}$ cm

[CBSE SP 2012]

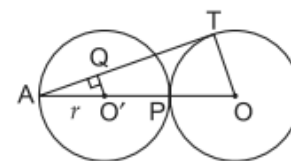
26. In the figure, AB is a diameter and AC is chord of a circle such that $\angle BAC = 30^\circ$. If DC is a tangent, then $\triangle BCD$ is
 (a) isosceles (b) equilateral
 (c) right-angled (d) acute angled [CBSE SP 2012]



27. In the given figure, PA and PB are two tangents drawn from an external point to a circle with centre C, and radius 4 cm. If $PA \perp PB$, then the length of each tangent is
 (a) 3 cm (b) 4 cm
 (c) 5 cm (d) 6 cm [CBSE 2013]

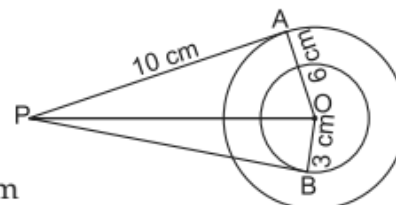


28. Equal circles with centre O and O' touch each other at P. OO' is produced to meet circle (O', r) at A. AT is a tangent to the circle (O, r). O'Q is perpendicular to AT. Then the value of $\frac{AQ}{AT}$ is



- (a) $\frac{2}{3}$ (b) $\frac{1}{2}$ (c) $\frac{1}{3}$ (d) $\frac{1}{4}$

29. Two concentric circles with centre O are of radii 6 cm and 3 cm. From an external point P, tangents PA and PB are drawn to these circles as shown in the figure. If AP = 10 cm, then BP is equal to



- (a) $\sqrt{91}$ cm (b) $\sqrt{127}$ cm
 (c) $\sqrt{119}$ cm (d) $\sqrt{109}$ cm

30. At one end of a diameter PQ of a circle of radius 5 cm, tangent XPY is drawn to the circle. The length of chord AB parallel to XY and at a distance of 8 cm from P is
 (a) 8 cm (b) 6 cm
 (c) 5 cm (d) 7 cm