CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-X

Subject: Mathematics

Total : 6 Marks (expected) [MCQ(1)-1 Mark, SA(1)-2 Marks, SA-II(1)-3 Marks]

Chapter Name : *Circles* (Chap : 10)

Level - 1

MCQ Type :

1. If a circle is inside another circle, then what is the maximum number of tangents from any point on the outer circle to the inner circle?

Ⓐ 0 Ⓑ 1 Ⓒ 2 Ⓓ 3

2. There are two circles with centres c_1 & c_2 with having radii 3 cm. Distance between their centres is 8 cm. How many common tangents can be drawn?

Ⓐ 4 Ⓑ 3 Ⓒ 2 Ⓓ 0

3. Select the correct statements for a tangent of a circle:

P: Tangent intersects circle in one & only one point.

Q: Tangent and circle must be in same plane.

R: Tangent passes through the centre of a circle.

Ⓐ Q and R Ⓑ only Q Ⓒ only P Ⓓ P and Q

4. If four sides of a quadrilateral ABCD are tangential to a circle, then

Ⓐ AC + AD = BD + CD Ⓑ AB + CD = BC + AD

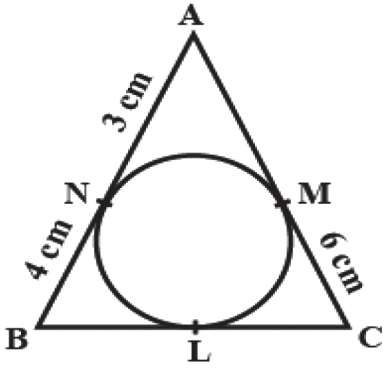
Ⓒ AB + CD = AC + BC Ⓓ AC + AD = BC + DB

[Hints : NCERT page no. 152 Q. 8]

5. If two circles touch externally, then number of common tangents is

Ⓐ 2 Ⓑ 3 Ⓒ 1 Ⓓ 0

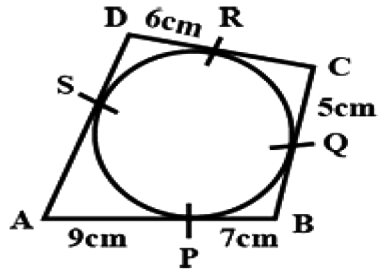
6. In Fig. 1, triangle ABC is circumscribing a circle. Then the length of BC is:



Ⓐ 7 cm Ⓑ 5 cm Ⓒ 4 cm Ⓓ 10 cm

[Hints : BN = BL, CL = CM]

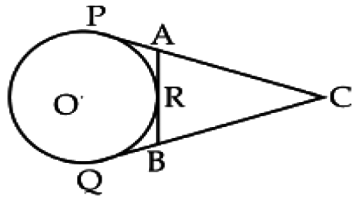
7. In the given figure, quadrilateral ABCD is circumscribed. The circle touches the sides AB, BC, CD, DA at P, Q, R, S respectively. If AP = 9 cm, BP = 7 cm, CQ = 5 cm, DR = 6 cm, find the perimeter of quad. ABCD



Ⓐ 54 cm Ⓑ 50 cm Ⓒ 48 cm Ⓓ 40 cm

[Hints : AB + CD = BC + AD]

8. 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, then the length BR is:



Ⓐ 7 cm Ⓑ 5 cm Ⓒ 4 cm Ⓓ 10 cm

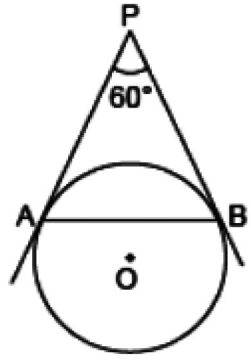
[Hints : Use tangent property]

SA–I Type Questions:

9. Two tangents PA and PB are drawn to the circle with centre O, such that ∠APB = 120°. Prove that OP = 2AP.

[Hints : ∠OPA = 60°, $\frac{AP}{OP}$ = cos 60°]

10. In figure, AP and BP are tangents to a circle with centre O, such that AP = 5 cm and ∠APB = 60°. Find the length of chord AB.



[Hints : Triangle APB is equilateral triangle.]

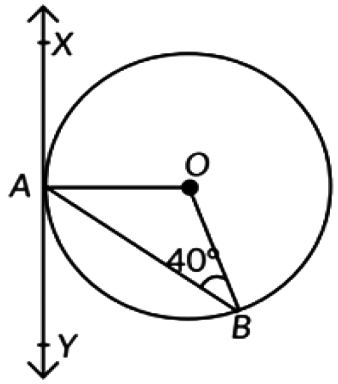
11. From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. Find the radius of the circle.

[Hints : Angle between tangent and radius at the point of contact is right angle.]

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

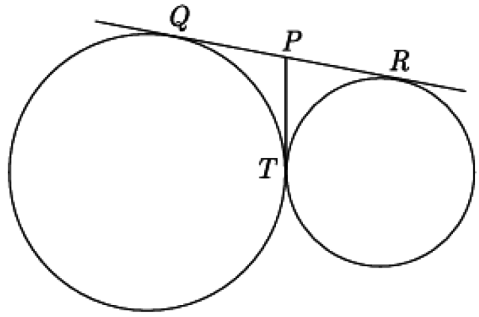
[Hints : Sum of co-interior angles formed by tangents is equal 180°.]

13. In Fig. XAY is a tangent to the circle centered at O. If ∠ABO = 40°, then find ∠BAY and ∠AOB.



[Hints : Find angle OAB.]

14. In the figure, QR is a common tangent to given circle which meet at T. Tangent at T meets QR at P. If QP = 3.8 cm, then find length of QR.



[Hints : Use tangent property.]

15. An isosceles triangle ABC, with AB = AC, circumscribes a circle, touching BC at P, AC at Q and AB at R. Prove that the contact point P bisects BC.

[Hints : Use tangent property. AB = AC.]

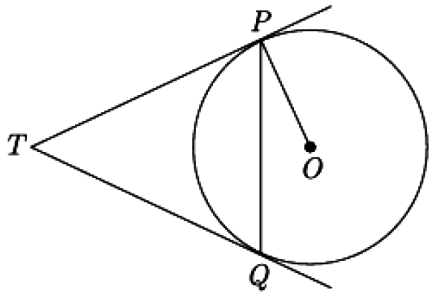
16. Prove that the rectangle circumscribing a circle is a square.

[Hints : Using tangent property prove adjacent sides are equal.]

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

[Hints : NCERT Page No. 146 theorem 10.1.]

18. In figure, two tangents TP and TQ are drawn to circle with centre O from an external point T. Prove that ∠PTQ = 2∠OPQ.



[Hints : NCERT Page No. 150 example 2.]

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

[Hints : NCERT Page No. 149 theorem 10.2.]

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

[Hints : NCERT Page No. 152 Q. 4.]

ANSWER

1. Ⓒ
2. Ⓐ
3. Ⓓ
4. Ⓑ
5. Ⓑ
6. Ⓓ
7. Ⓐ
8. Ⓒ
10. 5 cm
11. 7 cm
13. 50°, 100°
14. 7.6 cm