CBSE NCERT Based Chapter wise Questions (2025-2026)
Class-X
Subject: Mathematics
Total : 7 Marks (expected) [MCQ(2)-1 Mark, SA-I(1)-2 Marks, SA-II(1)-3 Marks]
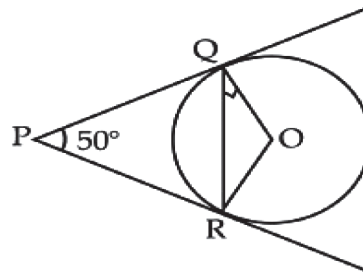**Chapter Name : *Circles* (Chap : 10)**
Level - 2 (Higher Order)

MCQ Type :

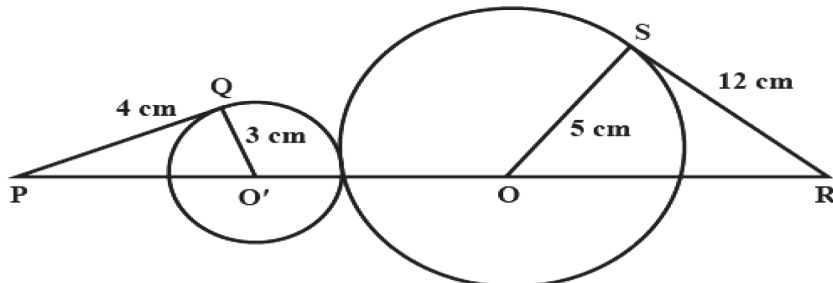**1.** In Fig. PQ and PR are the tangents to the circle with center O such that ∠QPR = 50°. Then ∠OQR is equal to:

Ⓐ 25°   Ⓑ 30°   Ⓒ 40°   Ⓓ 50°

[Hints : ∠PQR = 65°]

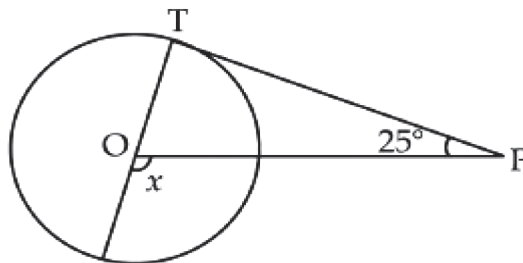**2.** In the given figure, the length of PR is:

Ⓐ 24 cm   Ⓑ 26 cm   Ⓒ 28 cm   Ⓓ 30 cm

[Hints : PO′ = 5 cm, OR = 13 cm.]

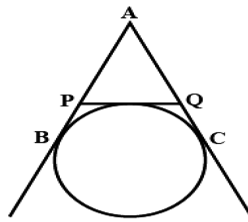**3.** In the given figure, if PT is a tangent of the circle with center O and ∠TPO = 25°, then the the measure of x is:

Ⓐ 120°   Ⓑ 125°   Ⓒ 110°   Ⓓ 115°

[Hints : Exterior angle = sum of opposite two interior angles.]
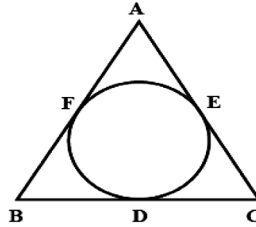
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4. In the given fig. AB, AC and PQ are tangents. If AB = 5 cm and PQ = PB + QC, then perimeter of ΔAPQ is:

Ⓐ 14 cm   Ⓑ 16 cm   Ⓒ 10 cm   Ⓓ 13 cm

[Hints : Perimeter of triangle APQ = 2 × AB.]

5. In the figure, if the semiperimeter of ΔABC = 23 cm, then AF + BD + CE is:

Ⓐ 24 cm   Ⓑ 46 cm   Ⓒ 11.5 cm   Ⓓ 23 cm
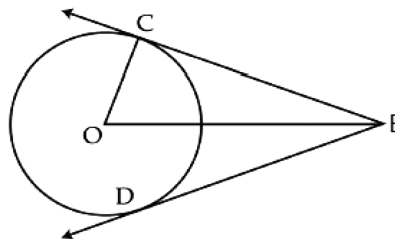
[Hints : Use tangent property.]

6. The length of the tangents from a point A to a circle of radius 3 cm is 4 cm. The distance (in cm) of A from the center of the circle is:

Ⓐ 7   Ⓑ $\sqrt{7}$ Ⓒ 5   Ⓓ 6

[Hints : Angle between tangent and radius at the point of contact is right angle.]
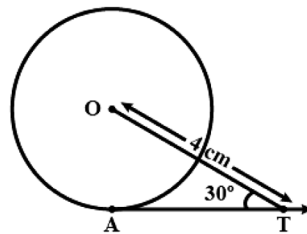
7. In the given figure, if OC = 9 cm and OB = 15 cm, then BC + BD is equal to:

Ⓐ 24 cm   Ⓑ 26 cm   Ⓒ 25 cm   Ⓓ 23 cm

[Hints : Find BC. Also BC = BD]

8. In the figure, AT is a tangent to the circle with center O such that OT = 4 cm and ∠OTA = 30°. Then AT is equal to
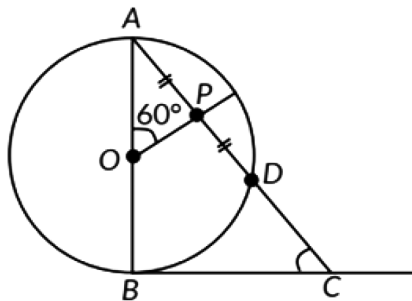

Ⓐ 7 cm   Ⓑ $2\sqrt{3}$ cm   Ⓒ $4\sqrt{3}$ cm   Ⓓ 6 cm
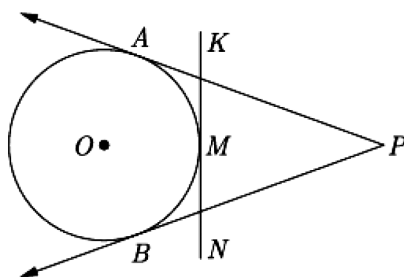
[Hints : $\dfrac{\text{AT}}{\text{OT}} = \cos30°$**]**

SA–I Type Questions:

9. In Fig. AB is diameter of a circle centered at O. BC is tangent to the circle at B. If OP bisects the chord AD and <AOP = 60°, then find ∠C.
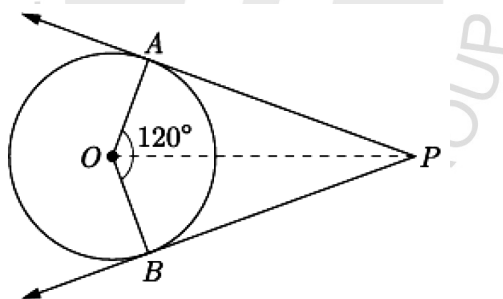

[Hints : Find angle A.]

10. PA and PB are tangents from point P to the circle with centre O as shown in figure. At point M, a tangent is drawn cutting PA at K and PB at N. Prove that KN = AK + BN.
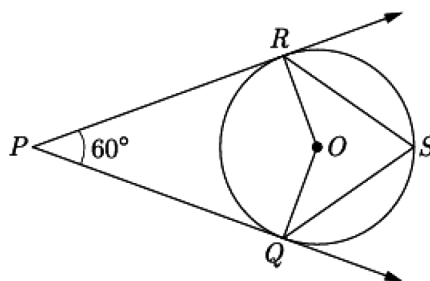

[Hints : Use tangent property.]

11. In the figure, PA and PB are tangents to a circle with centre O. If ∠AOB = 120°, then find ∠OPA.
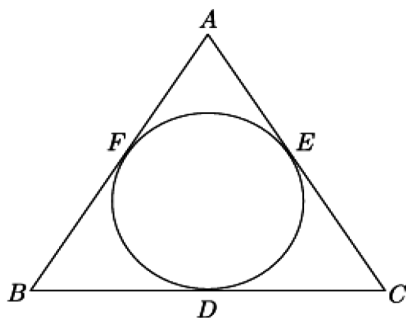

[Hints : Find angle AOP.]

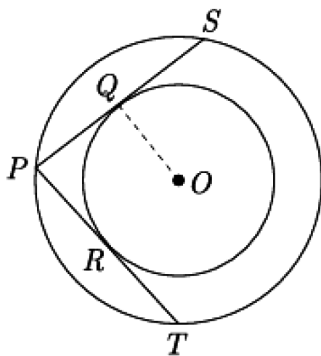12. In the given figure, find ∠QSR.

[Hints : Find angle QOR.]

13. A triangle ABC is drawn to circumscribe a circle. If AB = 13 cm, BC = 14 cm and AE = 7 cm, then find AC.

[Hints : Use tangent property.]

14. In the figure there are two concentric circles with centre O. PRT and PQS are tangents to the inner circle from a point P lying on the outer circle. If PR = 5 cm find the length of PS.
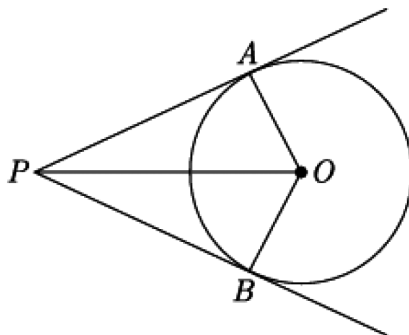

[Hints : Find PQ.]

SA–II Type Questions:

15. If a circle touches the side BC of a triangle ABC at P and extended sides AB and AC at Q and R, respectively, prove that $AQ = \frac{1}{2}(BC + CA + AB)$.

[Hints : Use tangent property.]

16. In the given figure, OP is equal to the diameter of a circle with centre O and PA and PB are tangents. Prove that ABP is an equilateral triangle.
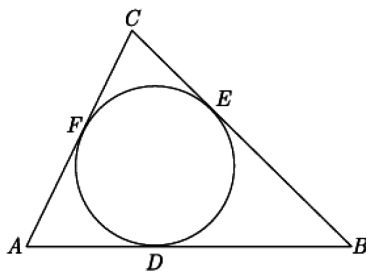

[Hints : OP = 2 × OA.]

17. From a point P, which is at a distant of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents PQ and PR are drawn to the circle, then find the area of the quadrilateral PQOR (in cm²).
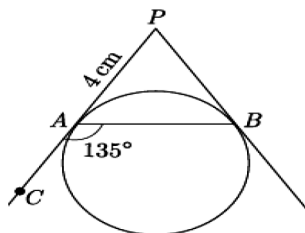
[Hints : Find PQ and area of triangle PQO.]

18. A circle is inscribed in a triangle ABC with sides AC, AB and BC as 8 cm, 10 cm and 12 cm respectively. Find the lengths of AD, BE and CF.

[Hints : Use tangent property and take AD = x cm.]

19. In the given figure, PA and PB are tangents to a circle from an external point P such that PA = 4 cm and ∠BAC = 135°. Find the length of chord AB.

[Hints : Angle APB = 90°.]

20. A right triangle ABC, right angled at A is circumscribing a circle. If AB = 6 cm and BC = 10 cm, find the radius r of the circle.

[Hints : $ar(\triangle ABC) = \dfrac{1}{2}r(BC + AC + AB)$]

ANSWER

1. Ⓐ
2. Ⓑ
3. Ⓓ
4. Ⓒ
5. Ⓓ
6. Ⓒ
7. Ⓐ
8. Ⓑ
9. 60°
11. 30°
12. 60°
13. 15 cm
14. 10 cm
17. 60 cm^2
18. 3 cm, 7 cm, 5 cm
19. $4\sqrt{2}$ cm
20. 2 cm