Mathematics

Practice Test Paper 3

(Chapter 10: Circles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

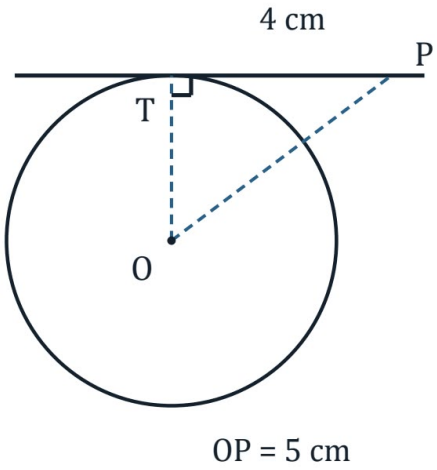
General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give exact answers unless stated otherwise. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. A tangent PT is 4 cm long and P is 5 cm from the centre O. The radius OT equals:



OP = 5 cm

(A) 4 cm
(B) 9 cm
(C) 3 cm
(D) 1 cm

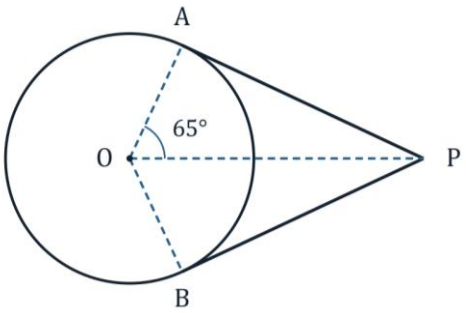
2. The number of tangents from an external point to a circle is:

(A) zero
(B) one
(C) infinitely many
(D) two

3. The line through the centre and the point of contact is also called the:

(A) secant
(B) normal
(C) chord
(D) arc

4. PA and PB touch the circle at A and B. Given ∠AOP = 65°, the angle between the tangents is:



(A) 65° (B) 25°
(C) 130° (D) 50°

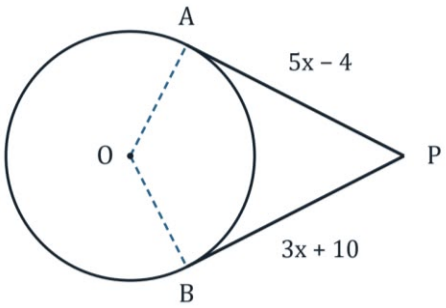
5. A line is 8 cm from a circle's centre, and the radius is 8 cm. The line is a:

(A) secant (B) non-intersecting line
(C) tangent (D) diameter

SECTION B

(4 questions × 2 marks = 8 marks)

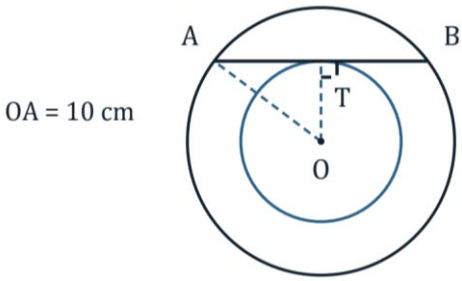
6. PA and PB are tangents to the circle with centre O. Their lengths are (5x − 4) cm and (3x + 10) cm. Find x and each tangent length.



7. A tangent at P to a circle with centre O meets another line through O at Q. If ∠OQP = 37°, find ∠QOP with a reason.

8. Two tangents from X touch a circle at M and N. XM = 2y + 5 cm and XN = 17 cm. Find y and the sum XM + XN.

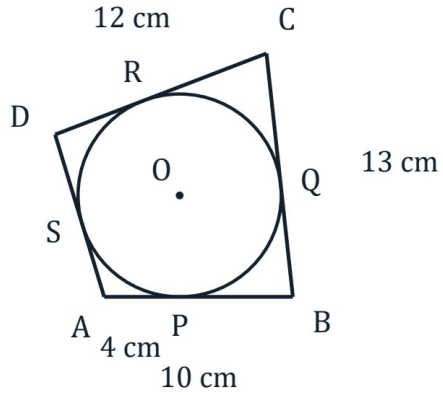
9. A 16 cm chord AB of a circle of radius 10 cm is tangent at T to a concentric inner circle. Find the inner radius.



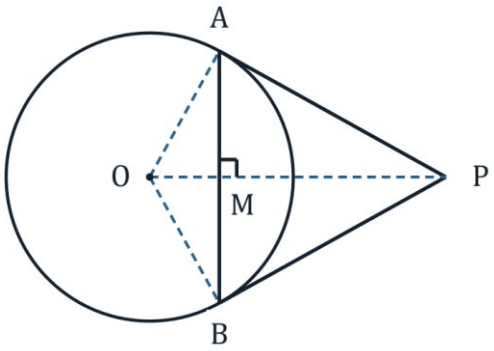
SECTION C

(3 questions × 3 marks = 9 marks)

10. ABCD circumscribes a circle touching AB, BC, CD and DA at P, Q, R and S. AB = 10 cm, BC = 13 cm, CD = 12 cm and AP = 4 cm. Find DA and all four tangent lengths from the vertices.



11. PA and PB are tangents to a circle with centre O, and OP meets AB at M. Prove that OP is the perpendicular bisector of AB.

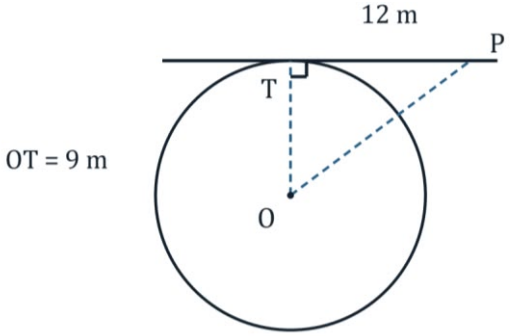


12. A rectangle circumscribes a circle of radius 5 cm. Prove that the rectangle is a square and find its area.

SECTION D

(Application Based Question - 3 marks)

13. A straight path PT of length 12 m touches a circular pond at T. The pond's centre is O and its radius is 9 m.



(i) Find OP.

(ii) Find the shortest distance from P to the pond's boundary.

(iii) State the length of the other tangent segment from P.