Mathematics

Practice Test Paper 1

(Chapter 10: Circles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

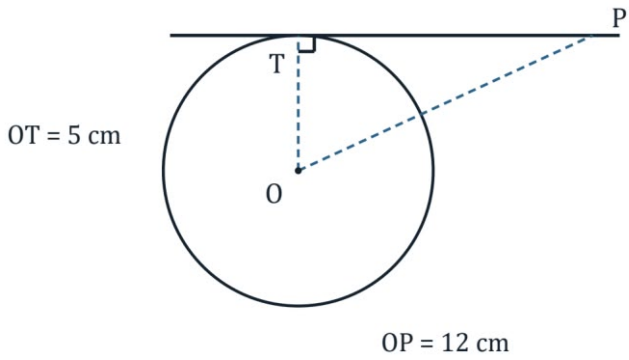
General Instructions

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. PT is tangent at T to the circle with centre O. The length PT is:

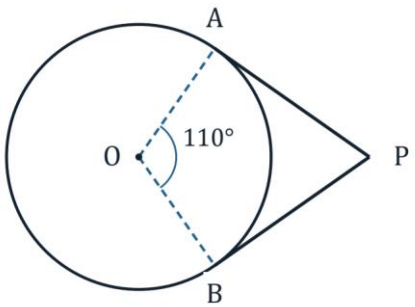


(A) $\sqrt{119}$ cm
(B) 13 cm
(C) 7 cm
(D) 17 cm

2. How many tangents can be drawn to a circle in total?

(A) one
(B) two
(C) none
(D) infinitely many

3. PA and PB are tangents to the circle with centre O. If ∠AOB = 110°, then ∠APB is:



(A) 60°
(B) 70°
(C) 80°
(D) 90°

4. A line that intersects a circle at two distinct points is a:

(A) secant (B) radius

(C) tangent (D) normal

5. How many tangents can be drawn through a point strictly inside a circle?

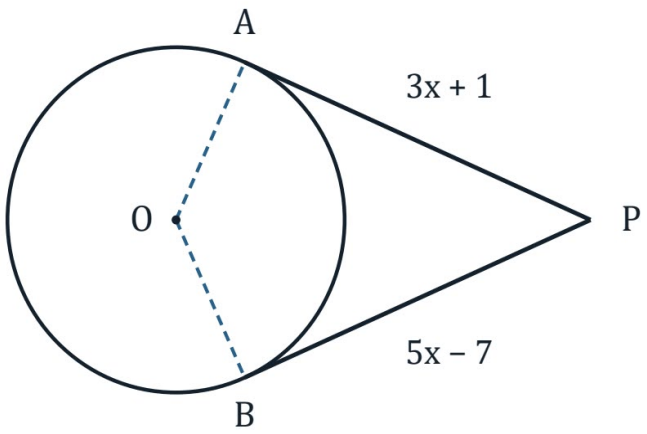
(A) one (B) two

(C) zero (D) infinitely many

SECTION B

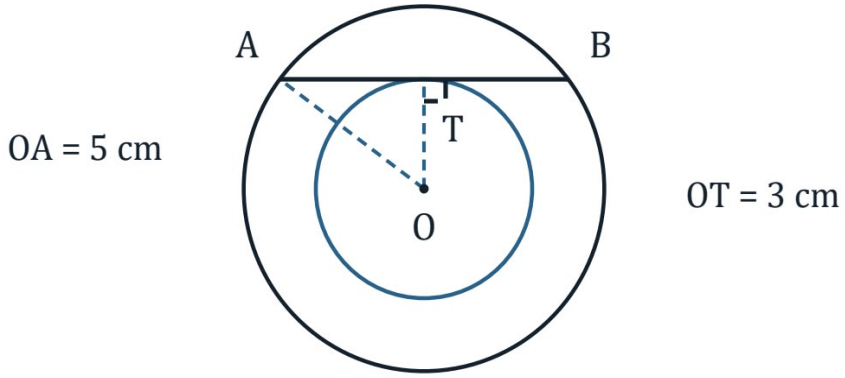
(4 questions × 2 marks = 8 marks)

6. PA and PB are tangents to the circle with centre O. Their lengths are (3x + 1) cm and (5x − 7) cm. Find x and each tangent length.



7. Prove that the tangents at the endpoints of a diameter are parallel.

8. Two concentric circles have radii 5 cm and 3 cm. AB is a chord of the larger circle touching the smaller circle at T. Find AB.



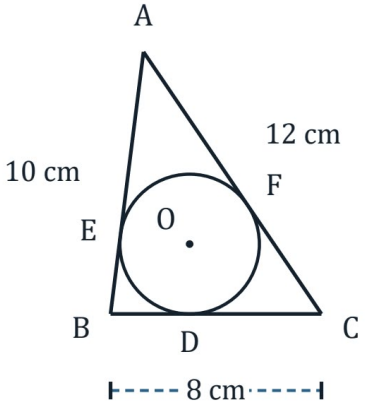
9. A line is 7 cm from the centre of a circle of radius 10 cm. Find the length of the chord cut by the line.

SECTION C

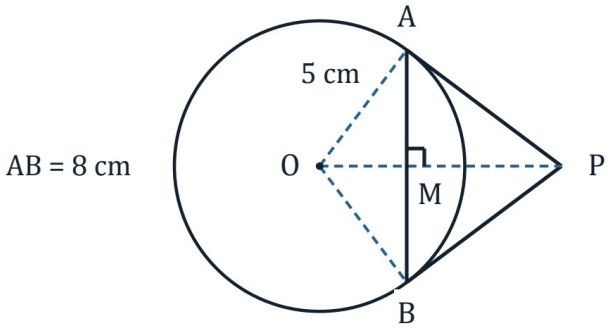
(3 questions × 3 marks = 9 marks)

10. Two circles of radii 9 cm and 4 cm touch externally. A common external tangent touches them at A and B. Find AB.

11. The incircle of triangle ABC touches AB, BC and CA at E, D and F. AB = 10 cm, BC = 8 cm and CA = 12 cm. Find AE, BD and CF.



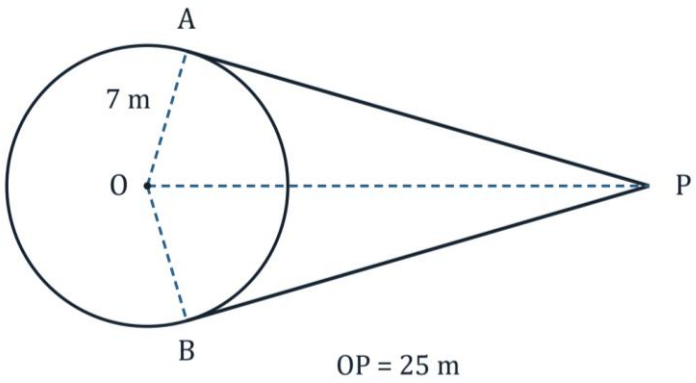
12. AB is an 8 cm chord of a circle of radius 5 cm. Tangents at A and B meet at P. OP meets AB at M. Find PA.



SECTION D

(Application Based Question - 3 marks)

13. A circular park has centre O and radius 7 m. From a gate P, 25 m from O, straight paths PA and PB touch the boundary at A and B.



(i) State ∠OAP with a reason.

(ii) Find PA.

(iii) Find the combined length PA + PB.