Mathematics

Practice Test Paper 2

(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

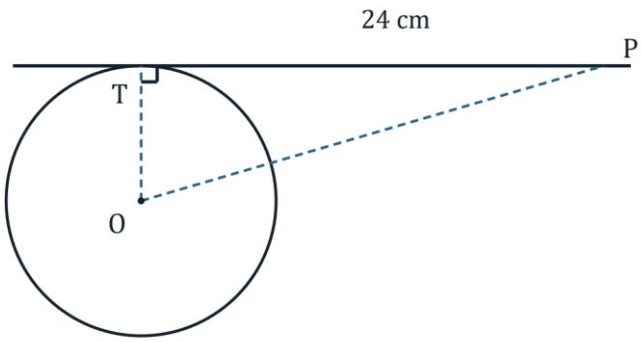
(5 questions × 1 mark = 5 marks)

1. The maximum number of tangents to a circle parallel to a given line is:

(A) one (B) two

(C) three (D) four

2. In the diagram, PT is tangent to the circle at T. If OP = 25 cm and PT = 24 cm, the radius is:



OP = 25 cm

(A) 12 cm (B) 7 cm

(C) 15 cm (D) 24.5 cm

3. The common point of a tangent and its circle is called the:

(A) midpoint (B) centre

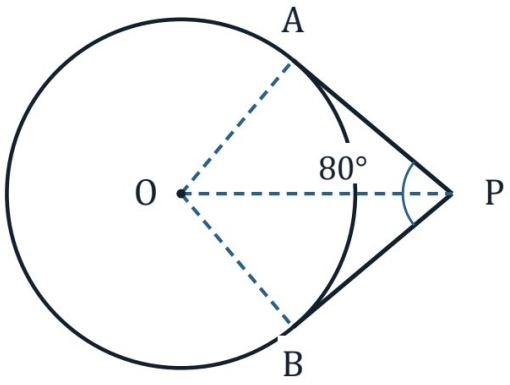
(C) point of contact (D) end of a diameter

4. The number of tangents through a point on a circle is:

(A) one (B) two

(C) zero (D) four

5. PA and PB are tangents, and O is the centre. If ∠APB = 80°, then ∠POA is:



(A) 40° (B) 100°

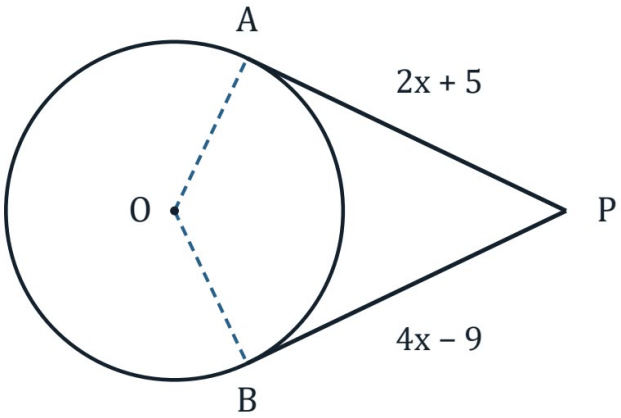
(C) 50° (D) 80°

SECTION B

(4 questions × 2 marks = 8 marks)

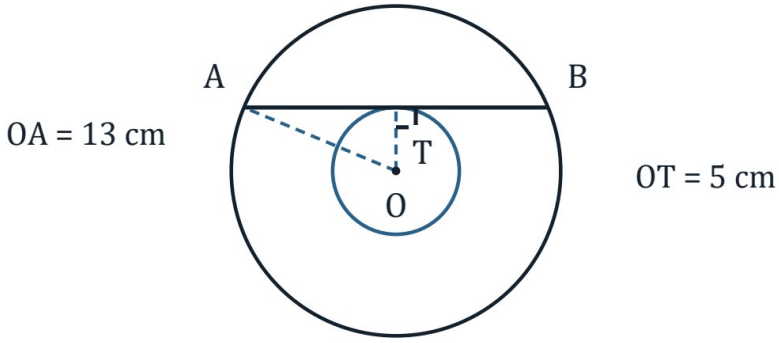
6. Why can no tangent to a circle pass through a point lying strictly inside it?

7. PA and PB are tangents to the circle with centre O. Their lengths are (2x + 5) cm and (4x − 9) cm. Find x and each tangent length.



8. A circle touches two parallel lines 15 cm apart. Find its radius and explain your reasoning.

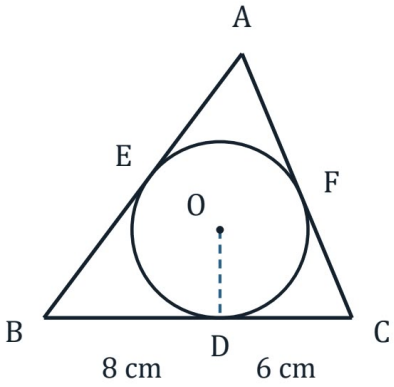
9. AB touches the inner of two concentric circles at T. The outer radius is 13 cm and inner radius is 5 cm. Find AT and AB.



SECTION C

(3 questions × 3 marks = 9 marks)

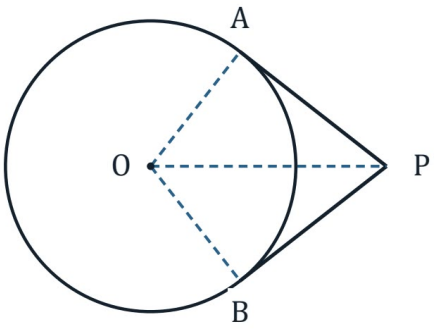
10. The incircle of triangle ABC has radius 4 cm and touches BC at D, with BD = 8 cm and DC = 6 cm. Find AB and AC. The other contact points are E and F.



OD = 4 cm

11. From P, 17 cm from the centre O of a circle of radius 8 cm, tangents PA and PB are drawn. Find the area and perimeter of quadrilateral OAPB.

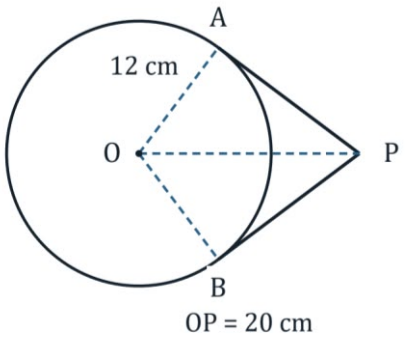
12. PA and PB are tangents from an external point P to a circle with centre O. Prove PA = PB by congruence.



SECTION D

(Application Based Question - 3 marks)

13. Two taut strings PA and PB touch a circular frame with centre O and radius 12 cm. The point P is 20 cm from O.



OP = 20 cm

(i) Find the length of one string.

(ii) Find the perimeter of OAPB.

(iii) Find the area of OAPB.