Mathematics

Practice Test Paper 4

(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 line lies 4 cm from the centre of a circle of radius 6 cm. The number of intersection points is:

(A) two (B) one

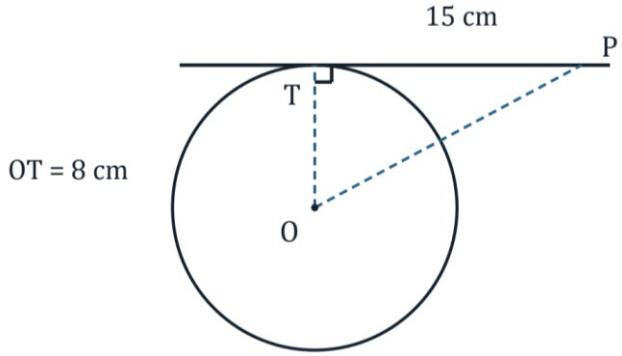
(C) zero (D) four

2. A line is 11 cm from the centre of a circle of radius 9 cm. It has how many common points with the circle?

(A) two (B) one

(C) three (D) zero

3. OT is a radius and PT is tangent at T. For the marked lengths, OP equals:



(A) 23 cm (B) 7 cm

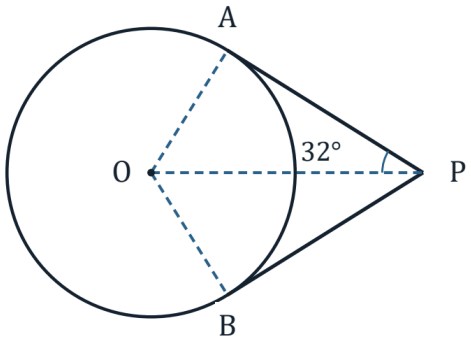
(C) 15 cm (D) 17 cm

4. Which equality follows for tangents PX and PY drawn from the same external point?

(A) OX = PX (B) PX = PY

(C) OP = PX (D) OX = OP

5. O is the centre and PA, PB are tangents. If ∠OPA = 32°, then the minor central angle ∠AOB is:



(A) 116° (B) 64°

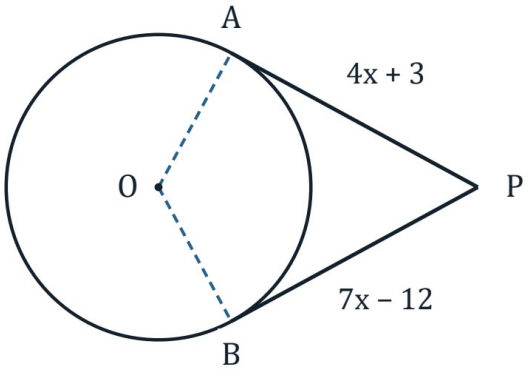
(C) 148° (D) 58°

SECTION B

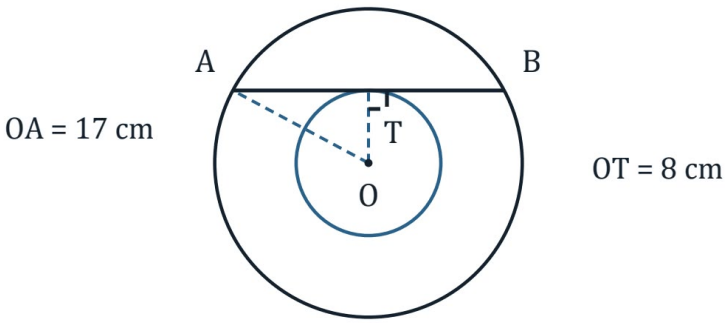
(4 questions × 2 marks = 8 marks)

6. Show that the perpendicular to a tangent at its point of contact passes through the centre.

7. PA and PB are tangents to the circle with centre O. Their lengths are (4x + 3) cm and (7x − 12) cm. Find x and each tangent length.



8. The outer and inner radii of the concentric circles shown are 17 cm and 8 cm. AB touches the inner circle at T. Find the chord length.



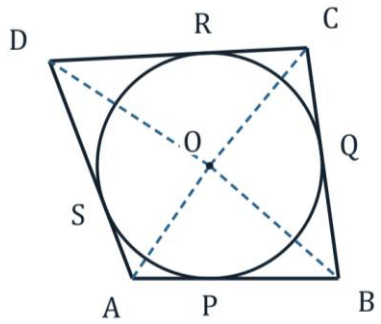
9. For a circle of radius 5 cm, classify lines whose distances from the centre are 3 cm, 5 cm and 7 cm. State the number of common points in each case.

SECTION C

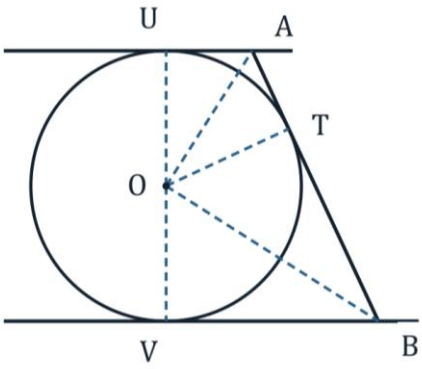
(3 questions × 3 marks = 9 marks)

10. Tangents PA and PB to a circle of radius 10 cm each have length 24 cm. OP meets AB at M. Find OP and the length AB.

11. A quadrilateral ABCD circumscribes a circle with centre O. Prove that ∠AOB + ∠COD = 180°.



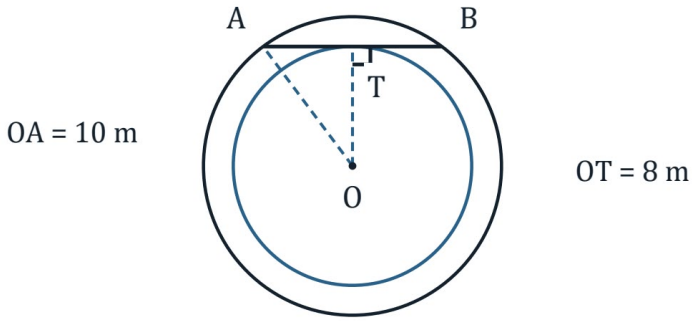
12. Parallel tangents at U and V to a circle with centre O are cut by a third tangent AB at T. Prove that ∠AOB = 90°.



SECTION D

(Application Based Question - 3 marks)

13. Two concentric circular tracks have radii 10 m and 8 m. A straight chord AB of the outer track touches the inner track at T.



(i) Find AT.

(ii) Find AB.

(iii) Find the area of triangle OAB.