Mathematics

Practice Test Paper 8

(Chapter 10: Circles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

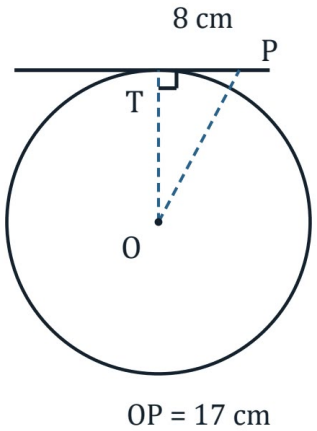
General Instructions

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 touches the circle at T, with OP = 17 cm and PT = 8 cm. The circle's radius is:



(A) 9 cm
(B) 25 cm
(C) 12 cm
(D) 15 cm

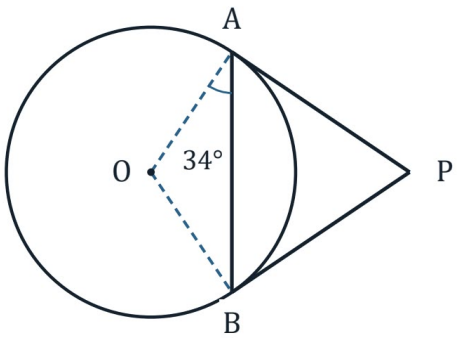
2. Which triangle congruence rule directly proves equality of the two tangents from an external point?

(A) RHS
(B) AAA
(C) SSA
(D) SAS using the tangent lengths as givens

3. The tangent at P and the radius OP meet only at P. Which segment is the shortest distance from O to that tangent?

(A) any chord
(B) any secant
(C) a diameter
(D) OP

4. PA and PB are tangents. O is the centre and ∠OAB = 34°. The angle ∠APB equals:



(A) 68°
(B) 34°
(C) 112°
(D) 56°

5. For a tangential quadrilateral ABCD, which relation is always true?

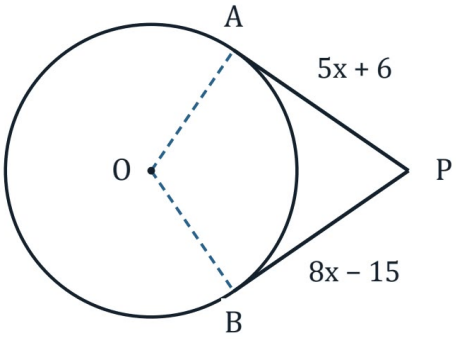
(A) AB + BC = CD + DA
(B) AB + CD = BC + DA
(C) AB = BC
(D) AC = BD

SECTION B

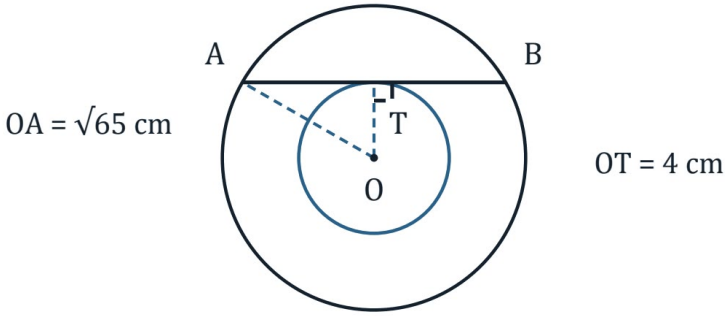
(4 questions × 2 marks = 8 marks)

6. A tangent segment is 20 cm long and its external point is 25 cm from the centre. Find the radius. How many tangents pass through this point?

7. PA and PB are tangents to the circle with centre O. Their lengths are (5x + 6) cm and (8x − 15) cm. Find x and each tangent length.



8. In the concentric circles shown, OA = $\sqrt{65}$ cm and OT = 4 cm. AB touches the inner circle at T. Find the chord length.

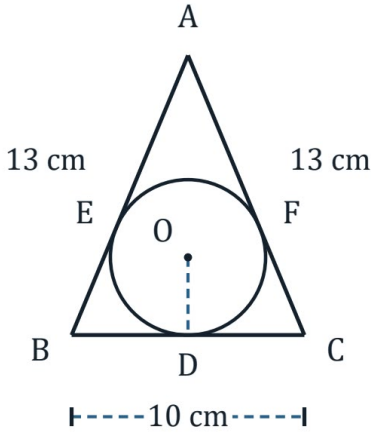


9. A line through a point T on a circle makes 75° with the radius OT. Can it be a tangent at T? Explain what type of line it is.

SECTION C

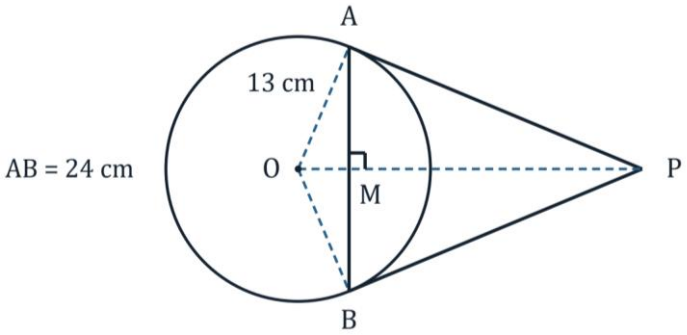
(3 questions × 3 marks = 9 marks)

10. An isosceles triangle ABC has AB = AC = 13 cm and BC = 10 cm. Its incircle touches the sides at E, D and F. Find AE, BD and the incircle radius.



11. For a circle of radius 5 cm, P and Q lie outside it on the same ray from its centre O, with Q farther away. Their tangent lengths are 12 cm and 20 cm. Find PQ.

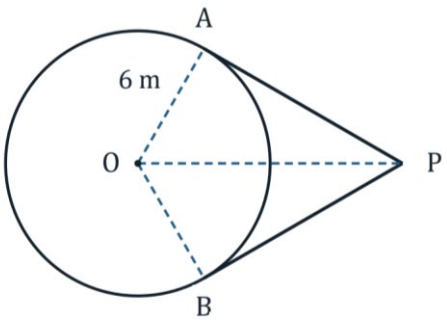
12. A circle has radius 13 cm and chord AB = 24 cm. The tangents at A and B meet at P. With M = OP ∩ AB, find OM and PA.



SECTION D

(Application Based Question - 3 marks)

13. A circular fountain has centre O and radius 6 m. Tangent paths PA and PB are laid from a point P, 12 m from O.



(i) Find PA.

(ii) Find ∠APO.

(iii) Find the angle between the two paths.