

MARKS: 20

MATHEMATICS

STD: X

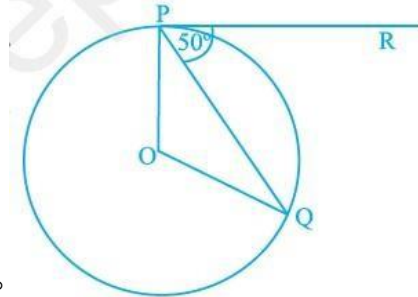
Chapter: Circles

Duration: 50 minutes

Q.1. Solve (1 Mark each)

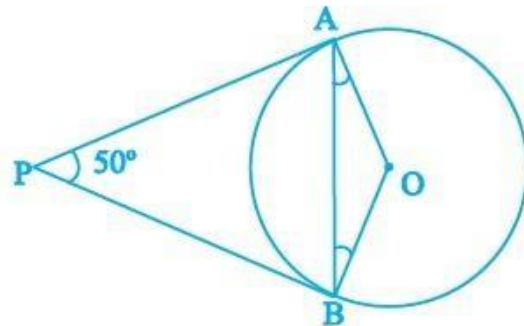
1. At one end A of a diameter AB of a circle of radius 5 cm, tangent XAY is drawn to the circle. The length of the chord CD parallel to XY and at a distance 8 cm from A is
 (A) 4 cm (B) 5 cm (C) 6 cm (D) 8 cm

2. In the given figure, if O is the centre of a circle, PQ is a chord and the tangent PR at P makes an angle of 50° with PQ, then $\angle POQ$ is equal to



- (A) 100° (B) 80° (C) 90° (D) 75°

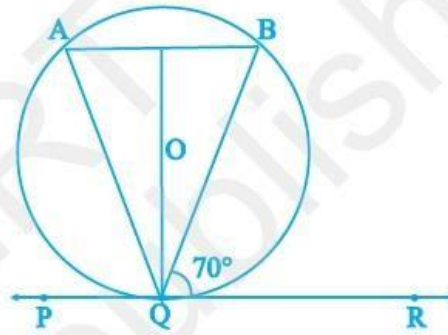
3. In the given figure, if PA and PB are tangents to the circle with centre O such that $\angle APB = 50^\circ$, then $\angle OAB$ is equal to



- (A) 25° (B) 30° (C) 40° (D) 50°

4. In the given figure, if PQR is the tangent to a circle at Q whose centre is O, AB is a chord parallel to PR and

$\angle BQR = 70^\circ$, then $\angle AQB$ is equal to



- (A) 20° (B) 40° (C) 35° (D) 45°

Q.2. Solve (2 Marks)

1. Out of the two concentric circles, the radius of the outer circle is 5 cm and the chord AC of length 8 cm is a tangent to the inner circle. Find the radius of the inner circle.

Q.3. Solve (3 Mark each)

1. Two tangents PQ and PR are drawn from an external point to a circle with centre O. Prove that QORP is a cyclic quadrilateral.
2. A chord PQ of a circle is parallel to the tangent drawn at a point R of the circle. Prove that R bisects the arc PRQ

Q.4. Solve (4 Mark each)

1. From an external point P, two tangents, PA and PB are drawn to a circle with centre O. At one point E on the circle tangent is drawn which intersects PA and PB at C and D, respectively. If PA = 10 cm, find the perimeter of the triangle PCD.
2. AB is a diameter and AC is a chord of a circle with centre O such that $\angle BAC = 30^\circ$. The tangent at C intersects extended AB at a point D. Prove that BC = BD.