Class 10 Mathematics · Chapter 10: Circles

Worksheet · 20 marks · about 40 minutes · based on NCERT

Name _____ Class and section _____ Date _____

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1. A chord PQ of a circle with centre O is equal in length to the radius. The tangents at P and Q meet at T. Then ∠PTQ is [1]

(a) 60° (b) 120°
(c) 90° (d) 150°

2. A straight cycle track runs past a circular pond and shares exactly one point K with the pond's edge. With respect to the circle of the pond's edge, the track is [1]

(a) a secant (b) a chord
(c) a tangent (d) a diameter

3. A point P is 6 cm from the centre of a circle of radius 6 cm. The number of tangents to the circle that pass through P is [1]

(a) 0 (b) 1
(c) 2 (d) 3

4. A straight lane from a tea stall K just touches a circular running track of radius 35 m, and the stretch of lane from K to the point of contact is 12 m long. The distance of K from the centre of the track is [1]

(a) 23 m (b) 37 m
(c) 47 m (d) √1081 m

5. PT is a tangent at P to a circle with centre O, and T is a point on the tangent. If ∠TOP = 52°, then ∠OTP is [1]

(a) 38° (b) 52°
(c) 48° (d) 128°

6. PA and PB are tangents from P to a circle with centre O. Using Pythagoras' theorem alone, without congruent triangles, show that PA = PB. [2]

7. TP and TQ are the tangents from T to a circle with centre O, and OT meets PQ at M. Prove that OT is the perpendicular bisector of PQ. [2]

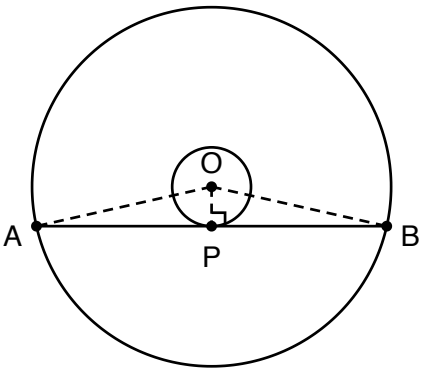
8. The tangents at two points A and B of a circle with centre O are parallel. Show that AB is a diameter. [2]

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9. From a point P, the tangent PA to a circle with centre O is 56 m long, and the point of the circle nearest to P is 32 m from P. Find the radius of the circle. [3]

10. The tangents at the ends of a chord PQ of a circle with centre O meet at T. If $\angle TPQ = 62°$, find $\angle PTQ$, $\angle POQ$ and $\angle OPQ$. [3]

11. Two concentric circles with centre O have radii 41 cm and 9 cm. A chord AB of the larger circle touches the smaller circle at P, as in the figure. Find AB and the area of ΔOAB. [3]



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