CIRCLES	CM101001

Very Short Answer Type Questions : **1 mark each**

1. From a point T, length of the tangent to a circle is 24 cm and the distance of T from the centre is 25 cm. The radius of the circle is :

(a) 7 cm (b) 12 cm (c) 15 cm (d) 24.5 cm

2. The length of the tangent drawn from a point, whose distance from the centre of a circle is 20 cm and radius of the circle is 16 cm, is :
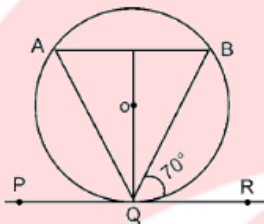
(a) 12 cm (b) 144 cm (c) 169 cm (d) 25 cm

3. In the given figure, O is the centre of two concentric circles of radii 3 cm and 5 cm. PQ is a chord of outer circle which touches the inner circle. The length of chord PQ is :
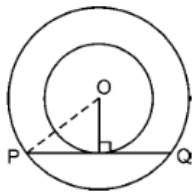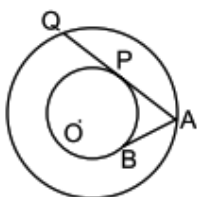

(a) 5 cm (b) 8 cm (c) 10 cm (d) $\sqrt{34}$ cm

4. In the figure, PQR is the tangent to a circle at Q whose centre is O, AB is a chord parallel to PR and ∠BQR = 70°, ∠AQB is equal to:

(a) 20° (b) 40° (c) 35° (d) 45°

5. The figure, shows two concentric circles with centre O. AB and APQ are tangents to the inner circle from point A lying on the outer circle. If AB = 7.5 cm, then AQ is equal to :
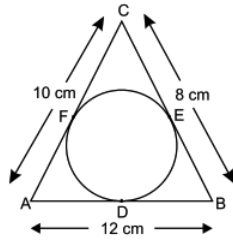

(a) 18 cm (b) 15 cm (c) 12 cm (d) 10 cm

Short Answer Type Questions : **2 marks each**

6. A pair of tangents PA and PB are drawn from an external point P to a circle with centre O. If

∠APB = 90° and PA = 6 cm, find the radius of the circle.

7. In the figure, a circle is inscribed in a DABC with sides AB = 12 cm, BC = 8 cm and AC = 10 cm.
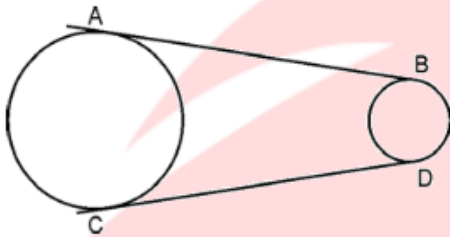
Find the lengths of AD, BE and CF.

8. Two tangents PA and PB are drawn to a circle with centre O, such that ∠APB = 120°.

 Prove that OP = 2 AP.

Long Answer Type Questions :   **3 marks each**

9. In the figure, AB and CD are common tangents to two circles of unequal radii. Prove that AB = CD.

10. 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.

11. Prove that the angle between the two tangents to a circle drawn from an external point, is

supplementary to the angle subtended by the line segment joining the points of contact at the centre.

Very Long Answer Type Questions :   **4 marks each**

12. O is the centre of a circle, PA and PB are tangents to the circle from a point P. Prove that

(i) PAOB is a cyclic quadrilateral

(ii) PO is the bisector of ∠APB.

(iii) ∠OAB = ∠OPA.

13. In the figure, tangents PQ and PR are drawn to a circle such that ∠RPQ = 30°. A chord RS is drawn

parallel to the tangent PQ. Find ∠RQS.