LATEX ASSIGNMENT

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23-09-2023

CLASS 10

Circles

1. In Fig. 1 if tangents **PA** and **PB** from an external point P to a circle with centre O , are inclined to each other at an angle of 80°, then $\angle AOB$ is equal to

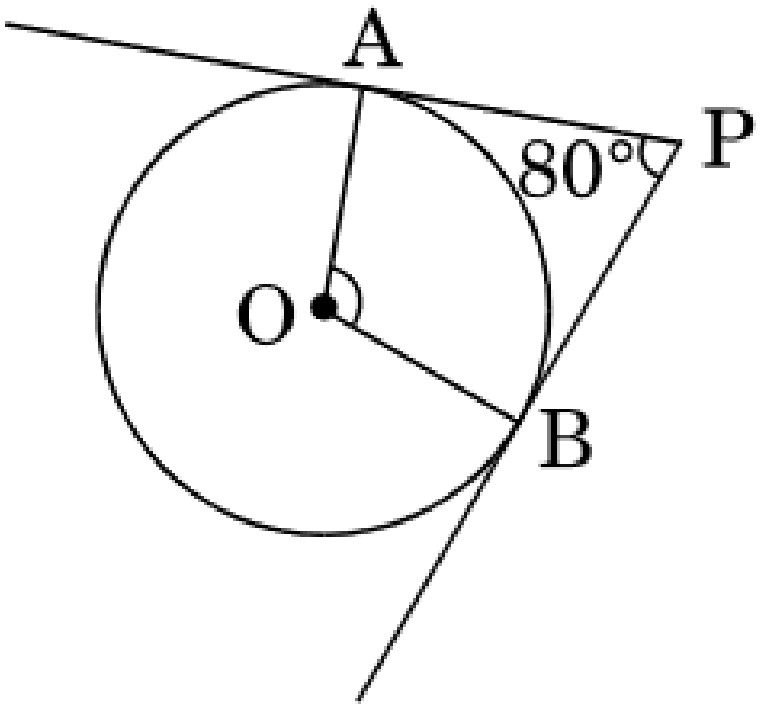

Figure 1: Tangents PA and PB

(a) 100°

(b) 60°

(c) 100°

(d) 100°

2. Two concentric circles are of radii $4cm$ and $3cm$. Find the length of the chord of the larger circle which touches the smaller circle.

3. In Fig. 2, a triangle ABC with $\angle AOB$ is shown. Taking AB as diameter, a circle has been drawn intersecting AC at point P. Prove that the tangent drawn at point P bisects BC.

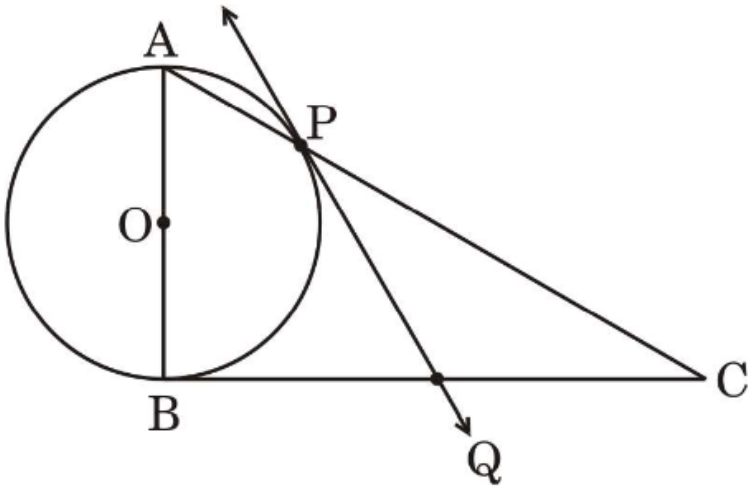

Figure 2: Concentric circles

4. Prove that a Parallelogram circumscribing a circle is a rhombus.

5. In Fig. 3, two circles with centres at O and O of radii $2r$ and r respectively, touch each other internally at A. A chord AB of the bigger circle meets the smaller circle at C. Show that C bisects AB.

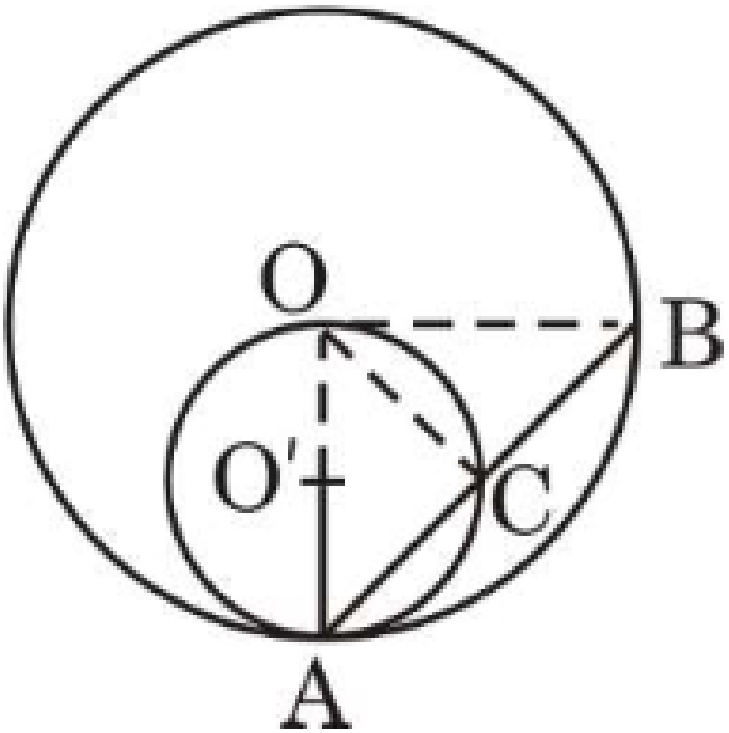

Figure 3: Two circles with center

6. In Fig. 4, O is centre of a circle of radius $5cm$. PA and BC are tangents to the circle at A and B respectively. If $OP = 13cm$, then find the length of tangents PA and BC.

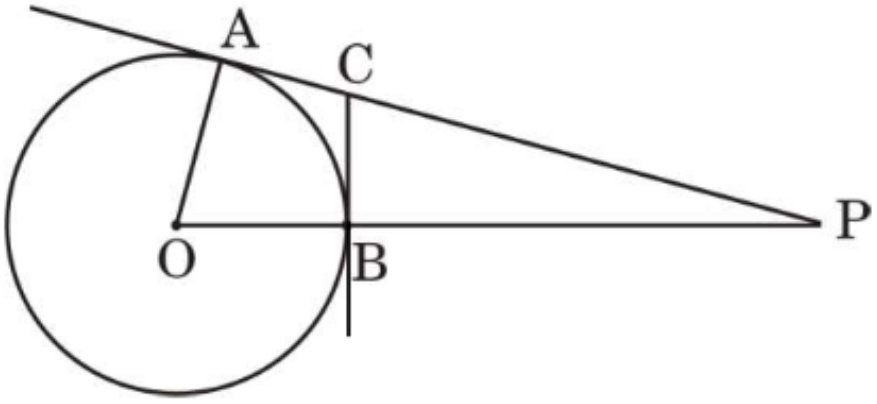

Figure 4: The center of the circle of radius 5 cm

7. In two concentric circles, a chord of length $48cm$ of the larger circle is a tangent to the smaller circle, whose radius is $7cm$. Find the radius of the larger circle.

8. At a point on the level ground, the angle of elevation of the top of a vertical tower is found to be α, such that $\tan\alpha = \frac{5}{12}$. On walking $192m$ towards the tower, the angle of elevation β is such that $\tan\beta = \frac{3}{4}$. Find the height of the tower.