

Latex Assignment

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September 22, 2023

CLASS 10

Circles

1. In figure 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

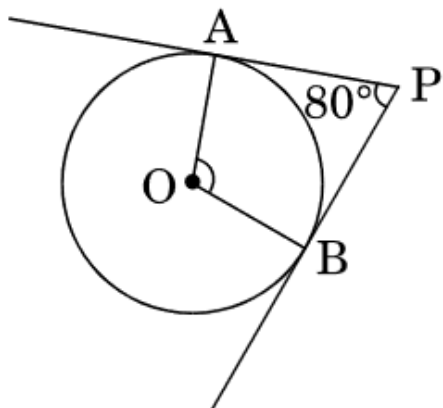


Figure 1: Tangents *PA* and *PB*

- (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 figure 3, 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 .

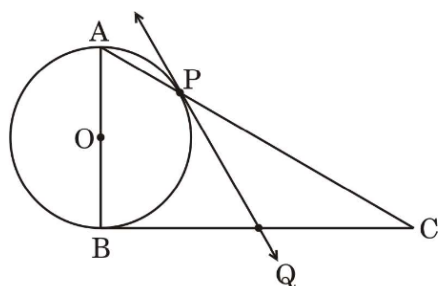


Figure 3: Concentric circles

4. Prove that a Parallelogram circumscribing a circle is a rhombus.
5. (a) In figure 4, 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 .

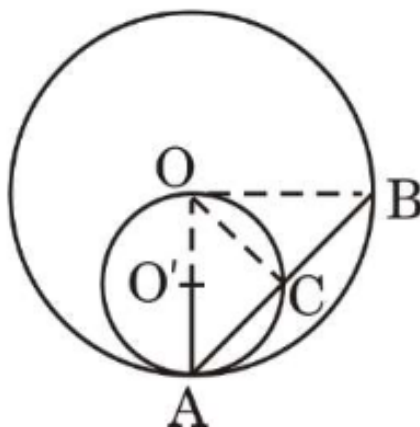


Figure 5: Two circles with center

- (b) In figure 5, O is centre of a circle of radius 5cm . PA and BC are tangents to the circle at A and B respectively. If $OP = 13\text{cm}$, then find the length of tangents PA and BC .

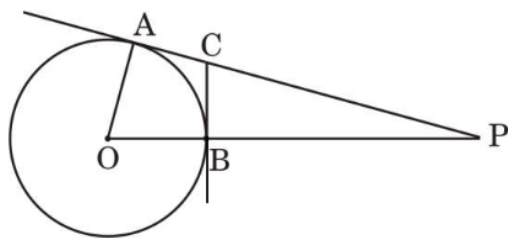


Figure 5: The center of the circle of radius 5 cm

6. 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.
7. 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.