

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

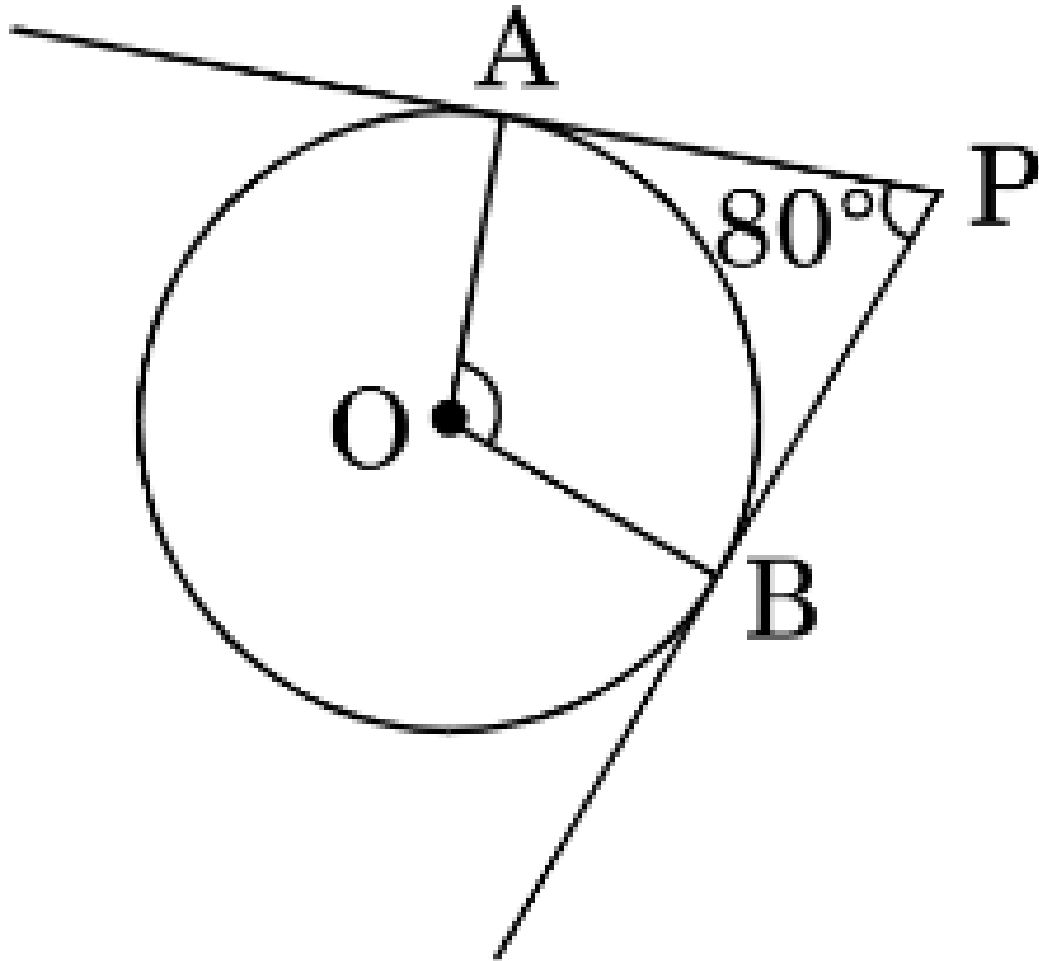


Figure 1:

1.  $100^\circ$
  2.  $60^\circ$
  3.  $80^\circ$
  4.  $50^\circ$
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 2, a triangle ABC  $\angle B = 90^\circ$  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

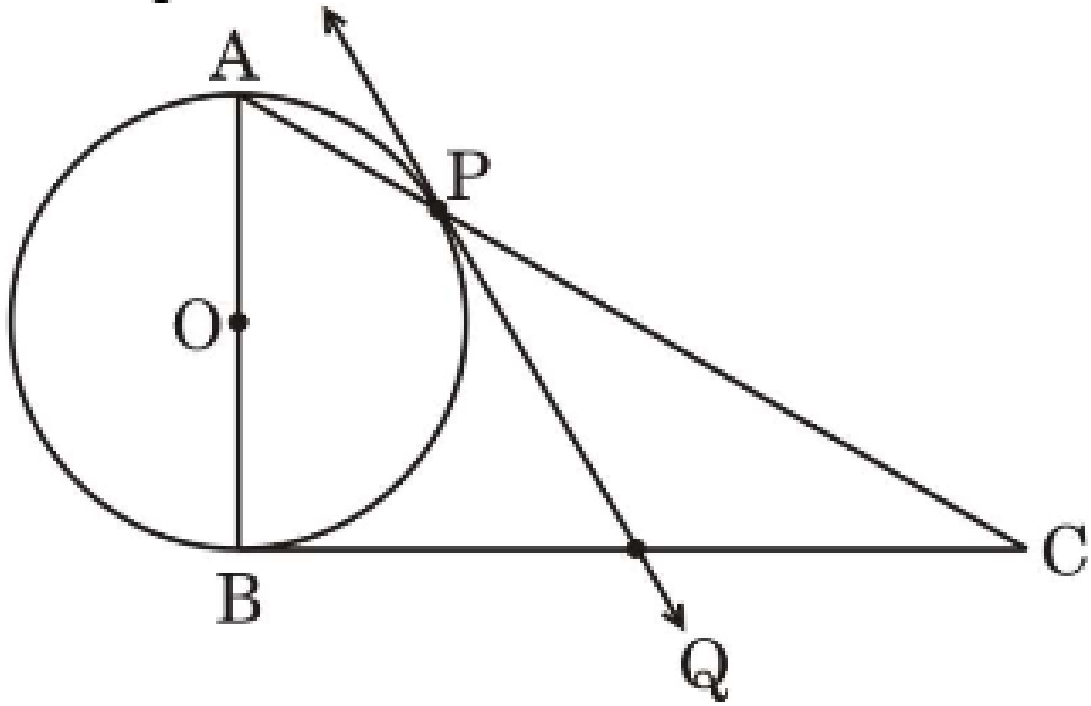


Figure 2:

4. Prove that a parallelogram circumscribing a circle is rhombus.
5. 1. In Figure 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.

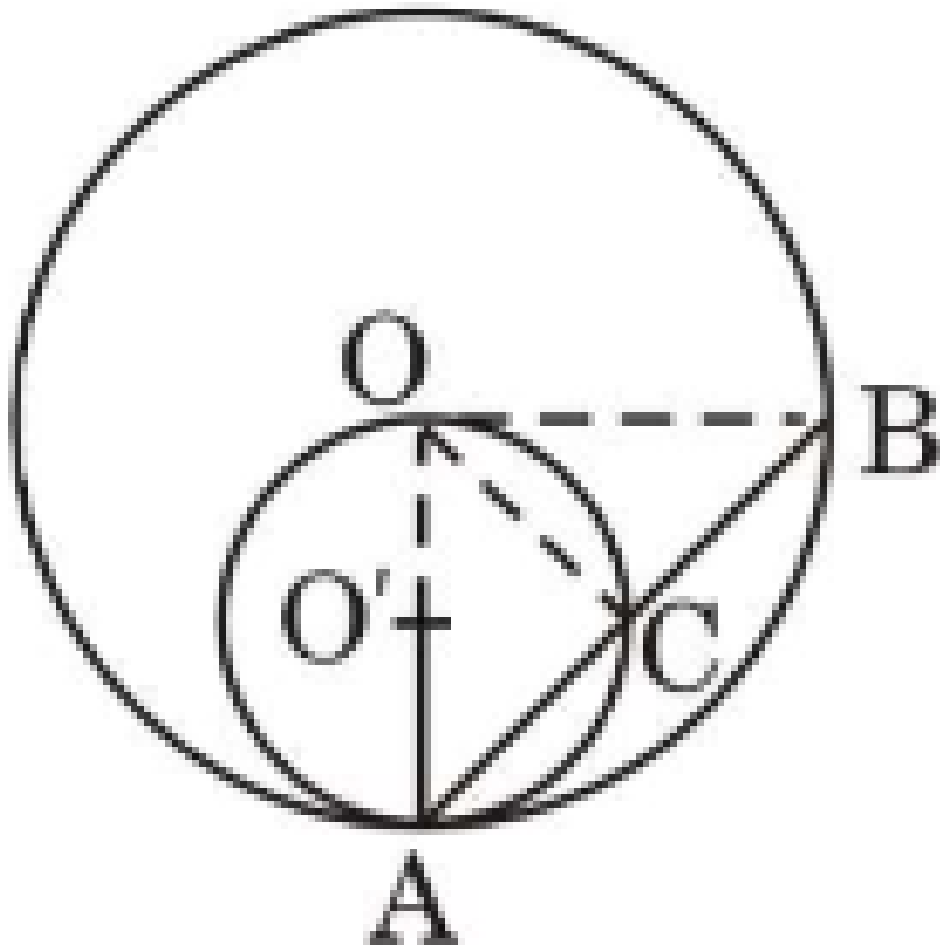


Figure 3:

2. In Figure 4, O is center 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 PA and BC

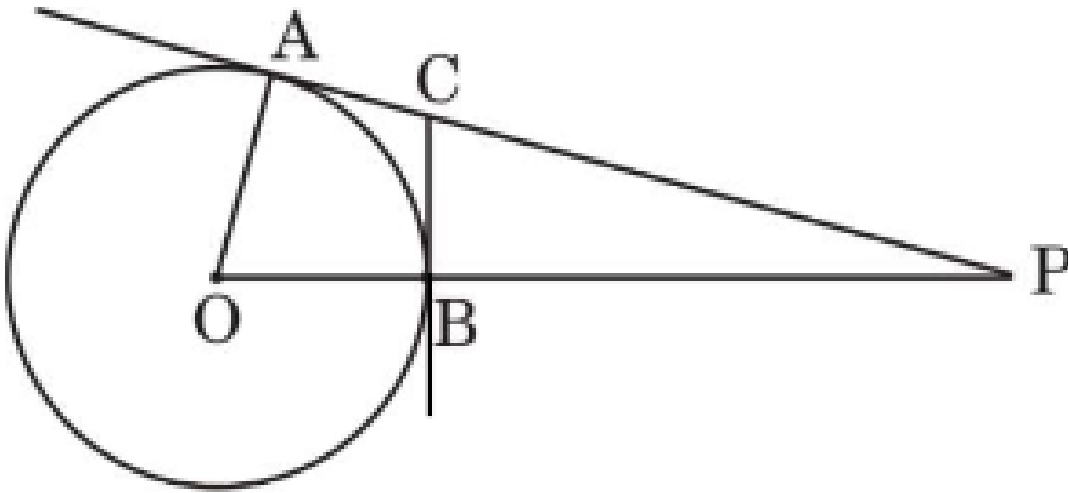


Figure 4:

6. In two concentric circles, a chord of length 48 cm of the larger circle is a tangent to the smaller circle, whose radius is 7 cm. Find the radius of the larger circle.
7.
  1. If two circles touch each other externally, then prove that the point of contact lies on the line joining their centres.
  2. Prove that the lengths of two tangents drawn from an external point to a circle are equal.