

CIRCLES

Arvind Kumar

Dec 2023

1. In Figure 1, from an external point P , two tangent PQ and PR are drawn to a circle of radius 4cm with center O . If $\angle PQR = 90^\circ$, then length of PQ is _____.

- (a) 3cm
- (b) 4cm
- (c) 2cm
- (d) $2\sqrt{2}\text{cm}$

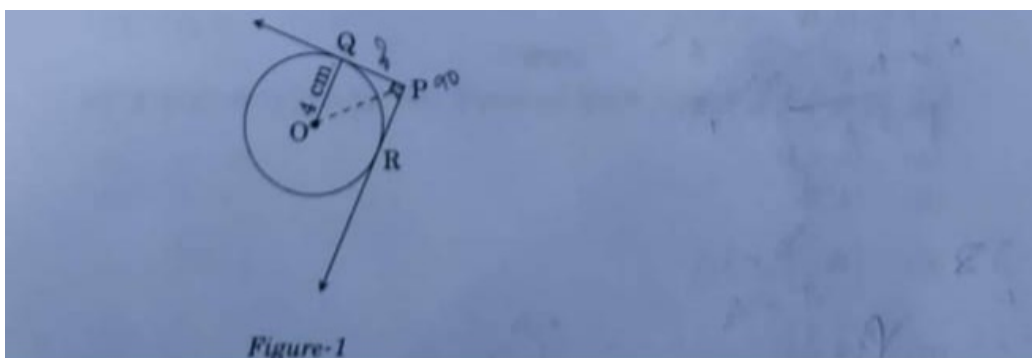


Figure 1: Circle with intersecting line and external points

2. In Figure 2, PQ is tangent to the circle with center at O , at the point B . If $\angle AOB = 100^\circ$, then $\angle ABP$ is equal to

- (a) 50°
- (b) 40°
- (c) 60°
- (d) 80°

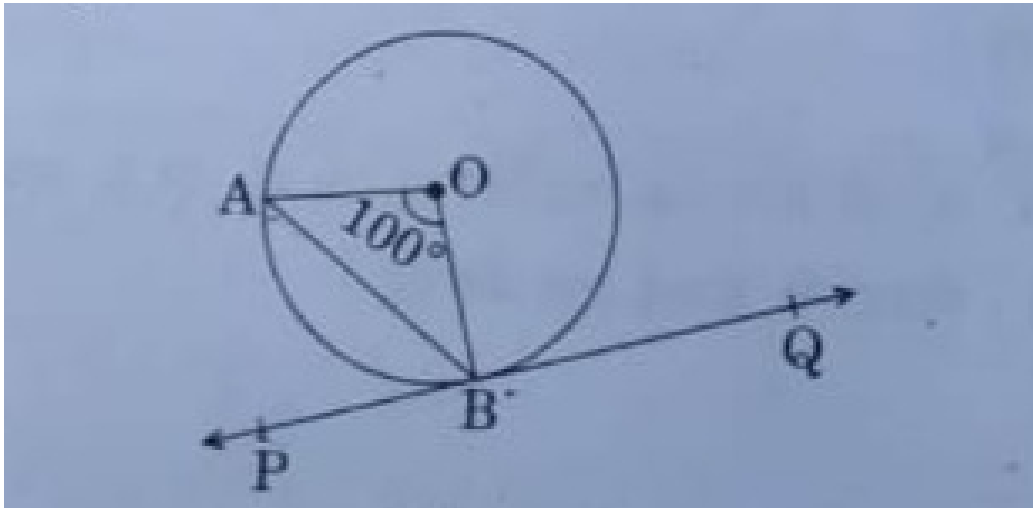


Figure 2: Geometric Diagram

3. In Figure 3, quadrilateral $ABCD$ is drawn to circumscribe a circle. Prove that
 $AB + CD = BC + AD$

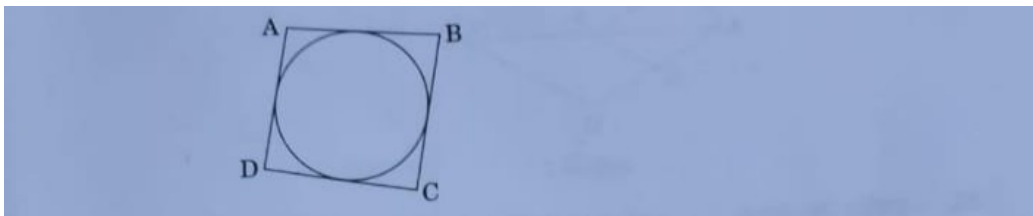


Figure 3: Inscribed Circle in a Rectangle

4. In Figure 4, find the perimeter of $\triangle ABC$, if $AP = 12cm$

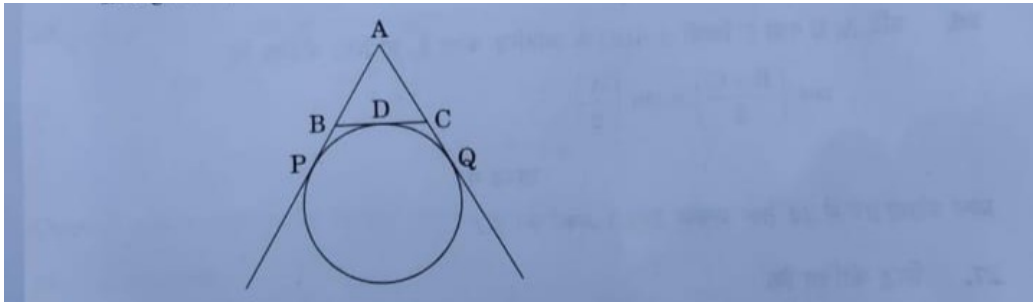


Figure 4: Inscribed Triangle in a Triangle