

CIRCLE

1. In the given figure 1, the quadrilateral $PQRS$ circumscribes a circle. Here $PA + CS$ is equal to : (see table 1)

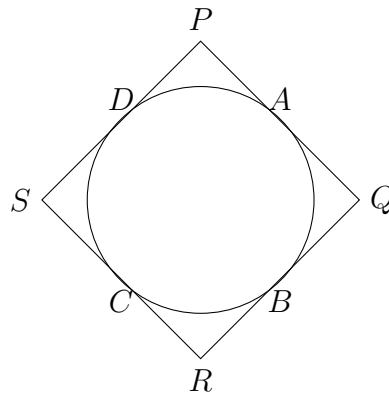


Figure 1

a) QR

b) PR

c) PS

d) PQ

Table 1

2. In the given figure 2, \vec{O} is the center of the circle. AB and AC are tangents drawn to the circle from point \vec{A} . If $\angle BAC = 65^\circ$, then find the measure of $\angle BOC$.

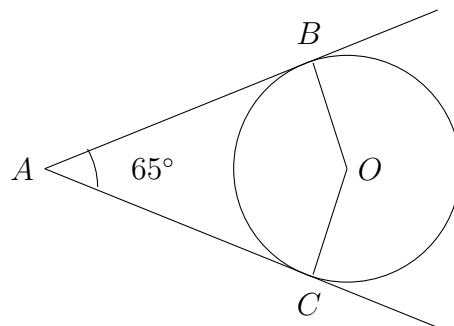


Figure 2

3. In the given figure 3, \vec{O} is the centre of the circle and QPR is a tangent to it at \vec{P} . Prove that $\angle QAP + \angle APR = 90^\circ$.

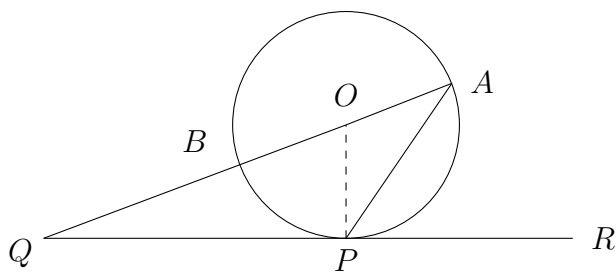


Figure 3

4. In the given figure 4, PQ is tangent to the circle centred at \vec{O} . If $\angle AOB = 95^\circ$, then the measure of $\angle ABQ$ will be (see table 2)

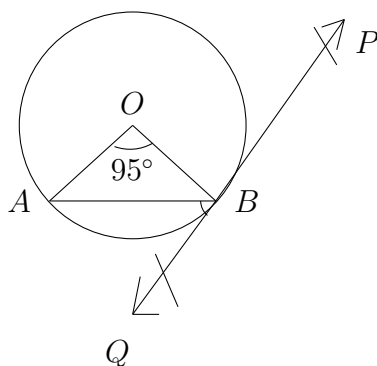


Figure 4

A) 47.5°

B) 42.5°

C) 85°

D) 95°

Table 2

5. (a) Two tangents TP and TQ are drawn between to a circle with centre O from an external point T (figure 5). Prove that $\angle PTQ = 2\angle OPQ$.

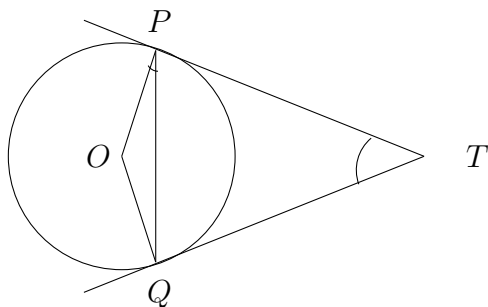


Figure 5

- (b) In the given figure 6, a circle is inscribed in a quadrilateral $ABCD$ in which $\angle B = 90^\circ$. If $AD = 17\text{cm}$, $AB = 20\text{cm}$ and $DS = 3\text{cm}$, then find the radius of the circle.

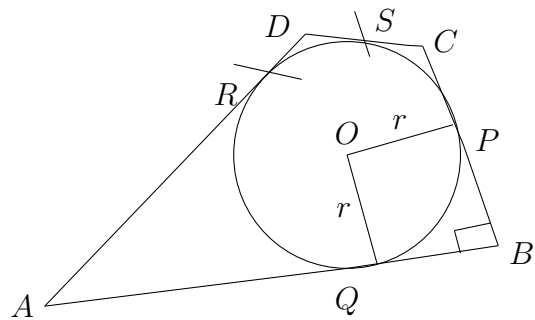


Figure 6

6. The discus throw is an event in which an athlete attempts to throw a discus (as shown in the given figure 7). The athlete spins anti-clockwise around one and a half times through a circle, then releases the throw. When released, the discus travels along tangent to the circular spin orbit.

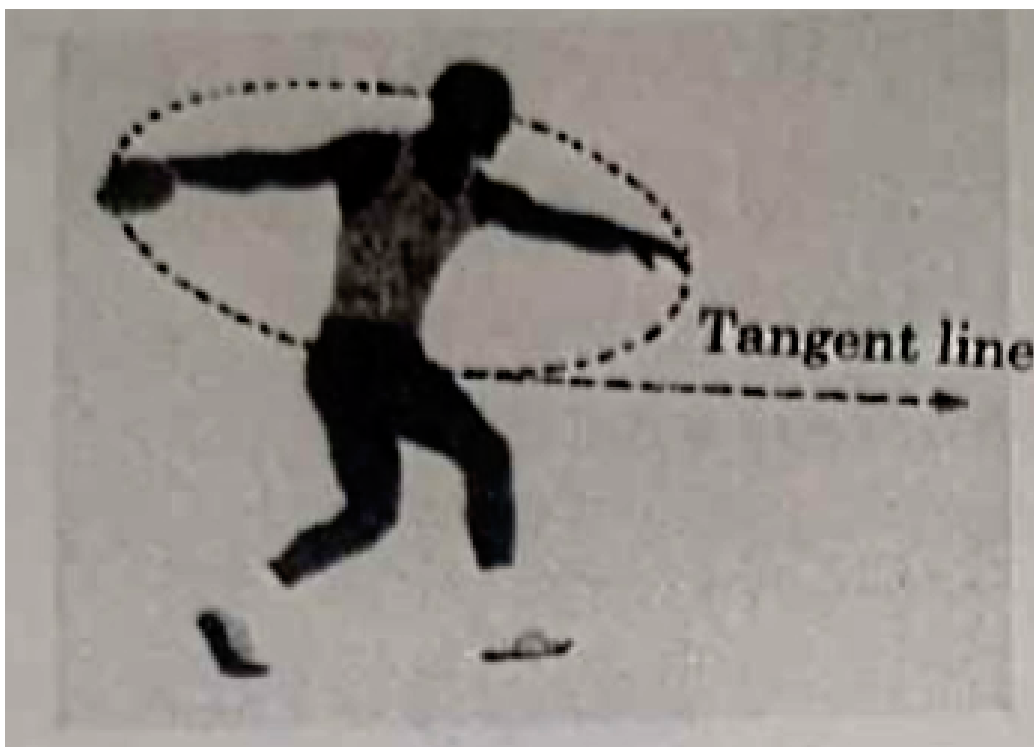


Figure 7

In the given figure 8, AB is one such tangent to a circle of radius 75 cm. Point O is centre of the circle and $\angle ABO = 30^\circ$. PQ is parallel to OA .

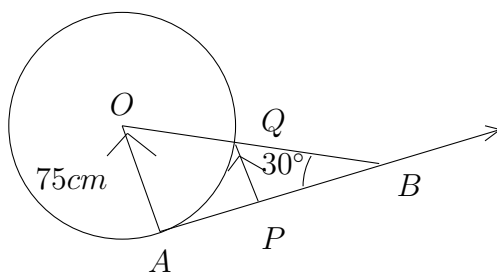


Figure 8

Based on above information:

- (a) find the length of AB .
- (b) find the length of OB .
- (c) find the length of AP .

find the length of PQ .

7. In the given figure 9, TA is a tangent to the circle with centre \vec{O} such that $OT = 4\text{cm}$, $\angle OTA = 30^\circ$, then length of TA is:

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

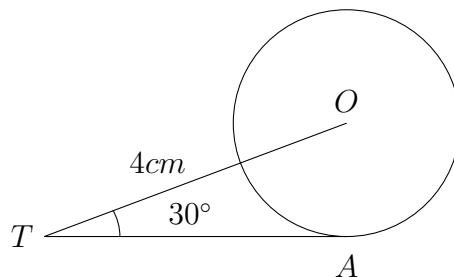


Figure 9

8. In the given figure 10, PT is a tangent at \vec{T} to the circle with centre \vec{O} . If $\angle TPO = 25^\circ$, then x is equal to:

- (a) 25°
- (b) 65°
- (c) 90°
- (d) 115°

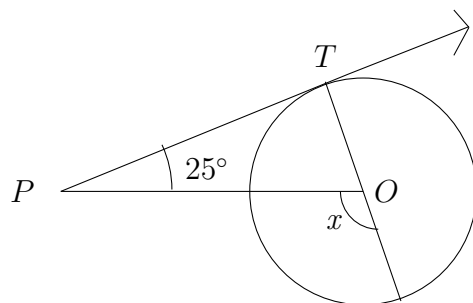


Figure 10

9. Two concentric circles are of radii 5 cm and 3 cm. Find the length of the cord of the larger circle which touches the smaller circle.