



WORKSHEET OF CHAPTER 10 CIRCLE

PART - 1

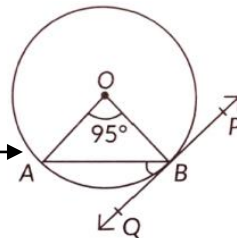
Q1. A chord of a circle of radius 10cm subtends a right angle at its centre. The length of the chord (in cm) is

- (a) $5\sqrt{2}$ (b) $10\sqrt{2}$ (c) $\frac{5}{\sqrt{2}}$ (d) $10\sqrt{3}$

Q2. In the given figure, PQ is tangent to the circle centred at O.

If $\angle AOB = 95^\circ$, then the measure of $\angle ABQ$ will be

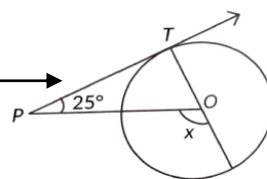
- (a) 47.5° (b) 42.5° (c) 85° (d) 95°



Q3. In the given figure, PT is a tangent at T to the circle with center O

and $\angle TPO = 25^\circ$, then x is equal to:

- (a) 25° (b) 65° (c) 90° (d) 115°



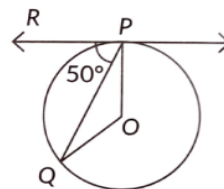
Q4. Length of tangent drawn to circle of radius 9 cm from a point 41 cm from the centre is

- (a) 40 cm (b) 9 cm (c) 41 cm (d) 50 cm

Q5. In Fig., if O is the centre of a circle, PQ is a chord. If the tangent PR at P

makes an angle of 50° with PQ, then the measure of $\angle POQ$

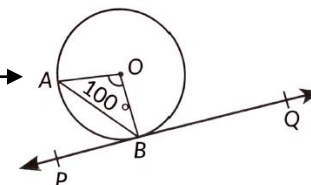
- (a) 50° (b) 40° (c) 100° (d) 130°



Q6. In figure PQ is tangent to the circle with centre at O

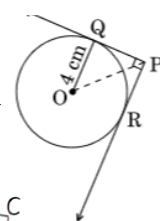
at the point B, if $\angle AOB = 100^\circ$, then $\angle ABP$ is equal to

- (a) 50° (b) 40° (c) 60° (d) 80°



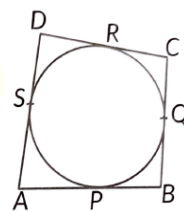
Q7. In the figure, from an external point P, two tangents PQ and PR are drawn to a circle of radius 4 cm with centre O. If $\angle QPR = 90^\circ$, then length of PQ is

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



Q8. In the fig, a quadrilateral ABCD is drawn to circumscribe a circle such that its sides AB, BC, CD and AD touches the circle at P, Q, R, and S respectively. If $AB = x$ cm, $BC = 7$ cm, $CR = 3$ cm and $AS = 5$ cm, find X.

- (a) 10 (b) 9 (c) 8 (d) 7



Q9. Two concentric circles are of radii 5 cm and 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.

- (a) 4 (b) 5 (c) 8 (d) 10

Q10. If two tangents inclined at an angle 60° are drawn to a circle of radius 3 cm, then the length of each tangent is

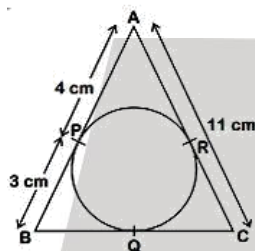
- (a) $\frac{3\sqrt{3}}{2}$ cm (b) 3 cm (c) 6 cm (d) $3\sqrt{3}$ cm

Q11. Prove that the tangent at any point of a circle is perpendicular to the radius through the points of contact.

Q12. 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 70° , then find $\angle POA$.

PART - 2

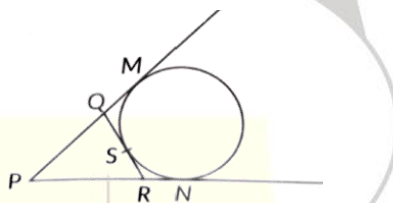
Q13. In the figure, ΔABC is circumscribing a circle, the length of BC is _____ cm.



Q14. Prove that a parallelogram circumscribing a circle is a rhombus?

Q15. In Fig. if a circle touches the side QR of ΔPQR at S and extended sides PQ and PR at M and N, respectively, then

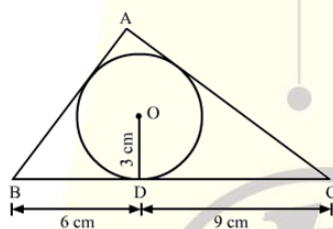
Prove that $PM = \frac{1}{2} (PQ + QR + PR)$



Q16. From an external point two tangents are drawn to a circle. Prove that the line joining the external point to the centre of the circle bisects the angle between the two tangents.

Q17. If two tangents inclined at an angle 60° are drawn to a circle of radius 3 cm, then the length of each tangent.

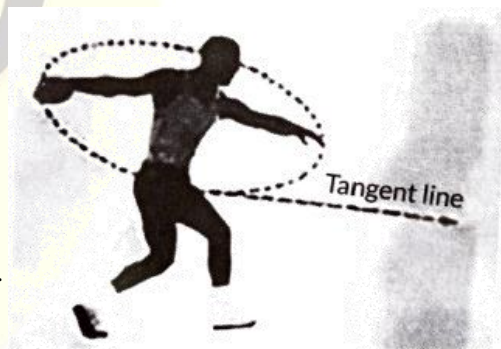
Q18. In the given figure, a triangle ABC is drawn to circumscribe a circle of radius 3cm, such that segments BD and DC are respectively of lengths 6 cm and 9 cm . If the area of $\Delta ABC = 54\text{cm}^2$, then find the lengths of sides AB and AC.



Q19. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.

Q 20. Case study

The discus throw is an event in which an athlete attempts to throw a discus. 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.



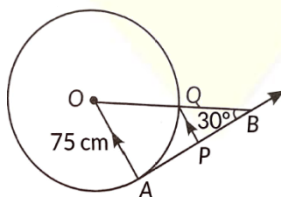
In the given figure, AB is one such tangent to a circle of radius 75 cm. Point O is centre of the circle and $\angle ABO = 30^\circ$. PQ is parallel to OA.

Based on above information:

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

OR

Find the length of PQ.





ANSWER KEY

Ans 1 (b) $10\sqrt{2}$ Ans 2 (a) 47.5° Ans 3 (d) 115°

Ans 4 (a) 40 cm

Ans 5 (c) 100° Ans 6 (a) 50°

Ans 7 (b) 4 cm

Ans 8 (b) 9

Ans 9 (c) 8

Ans 10 (d) $10\sqrt{3}$ cm

Ans 11 Proving

Ans 12 55°

Ans 13 10 cm

Ans 14 Proving

Ans 15 Proving cm

Ans 16 Proving

Ans 17 $3\sqrt{3}$ cm

Ans 18 12 cm

Ans 19 Proving

Ans 20 case study (a) $AB = 75\sqrt{3}$ cm(b) $OB = 150$ cm(c) $AP = \frac{75\sqrt{3}}{2}$ cm or $PQ = 37.5$ cm