



VIDYA BHARATI SCHOOL

OLYMPIAD WORKSHEET: November- 2017

GRADE: X

SUBJECT: MATHEMATICS

- Q1. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q such that OQ = 12 cm. Length PQ is
- (a) 12 cm (b) 13 cm (c) 8.5 cm (d) $\sqrt{3}$
- Q2. From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. The radius of the circle is
- (a) 7 cm (b) 12 cm (c) 15 cm (d) 24.5 cm
- Q3. The length of the tangent from a point A at a circle, of radius 3 cm, is 4 cm. the distance of A from the centre of the circle is
- (a) $\sqrt{7}$ cm (b) 7 cm (c) 5 cm (d) 25 cm
- Q4. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of 80° then $\angle POA$ is equal to
- (a) 50° (b) 60° (c) 70° (d) 80°
- Q5. If TP and TQ are two tangents to a circle with centre O so that $\angle POQ = 110^\circ$, then $\angle PTQ$ is equal to
- (a) 60° (b) 70° (c) 80° (d) 90°
- Q6. PQ is a tangent to a circle with centre O at the point P. if $\triangle OPQ$ is an isosceles triangle, then $\angle OQP$ is equal to
- (a) 30° (b) 45° (c) 60° (d) 90°
- Q7. Two equal circles touch each other externally at C and AB is a common tangent to the circles. Then $\angle ACB =$
- (a) 60° (b) 45° (c) 30° (d) 90°

Q8. ABC is a right angled triangle, right angled at B such that $BC = 6$ cm and $AB = 8$ cm. A circle with centre O is inscribed in $\triangle ABC$. The radius of the circle is

- (a) 1 cm (b) 2 cm (c) 3 cm (d) 4 cm

Q9. PQ is tangent drawn from a point P to a circle with centre O and QOR is a diameter of the circle such that $\angle POR = 120^\circ$, then $\angle OPQ$ is

- (a) 60° (b) 45° (c) 30° (d) 90°

Q10. If four sides of a quadrilateral $ABCD$ are tangential to a circle, then

- (a) $AC + AD = BD + CD$
 (b) $AB + CD = BC + AD$
 (c) $AB + CD = AC + BC$
 (d) $AC + AD = BC + BD$

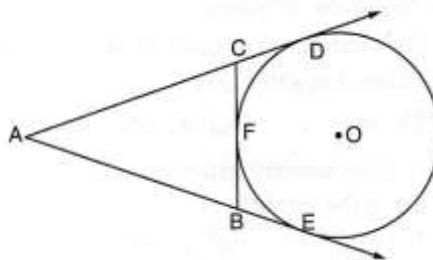
Q11. The length of the tangent drawn from a point 8 cm away from the centre of a circle of radius 6 cm is

- (a) $\sqrt{7}$ cm (b) $2\sqrt{7}$ cm (c) 10 cm (d) 5 cm

Q12. AB and CD are two common tangents to circles which touch each other at C . If D lies on AB such that $CD = 4$ cm, then AB is equal to

- (a) 4 cm (b) 6 cm (c) 10 cm (d) 5 cm

Q13. In Fig. 10.88, if AD , AE and BC are tangents to the circle at D , E and respectively then,



- (a) $AD = AB + BC + CA$

(b) $2AD = AB + BC + CA$

(c) $3AD = AB + BC + CA$

(d) $4AD = AB + BC + CA$

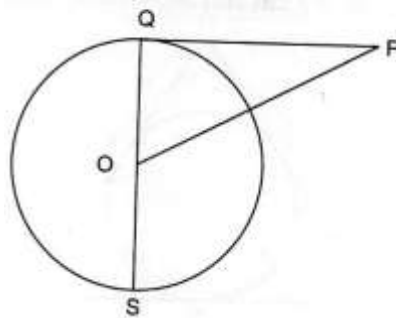
Q14. In Fig. 10.89, RQ is a tangent to the circle with centre O. If $SQ = 6$ cm and $QR = 4$ cm, then $OR =$

(a) 8 cm

(b) 3 cm

(c) 2.5 cm

(d) 5 cm



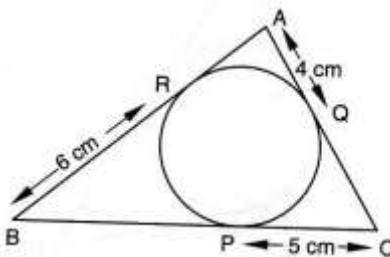
Q15. In the perimeter of ΔABC is

(a) 30 cm

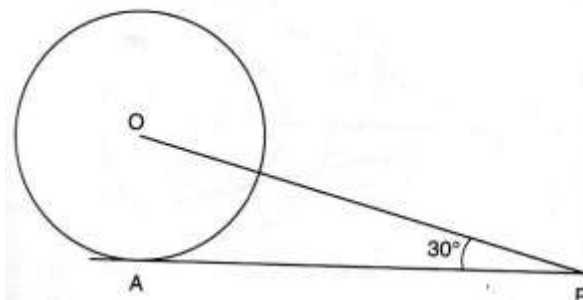
(b) 60 cm

(c) 45 cm

(d) 15 cm



Q16. In AP is a tangent to the circle with centre O such that $OP = 4$ cm and $\angle OPA = 30^\circ$. Then, $AP =$



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

Q17. AP and PQ are tangents drawn from a point A to a circle with centre O and radius 9 cm. If OA = 15 cm, then AP + AQ =

- (a) 12 cm (b) 18 cm (c) 24 cm (d) 36 cm

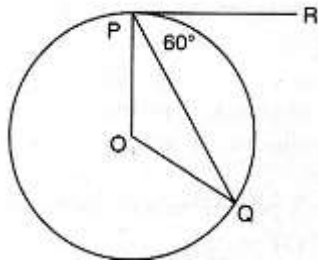
Q18. At one end of a diameter PQ of a circle of radius 5 cm, tangent XPY is drawn to the circle. The length of chord AB parallel to XY and at a distance of 8 cm from P is

- (a) 5 cm (b) 6 cm (c) 7 cm (d) 36 cm

Q19. If PT is tangent drawn from a point P to a circle touching it at T and O is the centre of the circle, then $\angle OPT + \angle POT =$

- (a) 30° (b) 60° (c) 90° (d) 180°

Q20. In fig. 10.92, if AB = 12 cm, BC = 8 cm and AC = 10 cm, then AD =



- (a) 5 cm (b) 4 cm (c) 6 cm (d) 7 cm

*For more practice material please click:www.brilliant.org;www.sofolympiadtrainer.co
www.olympiadhelper.com