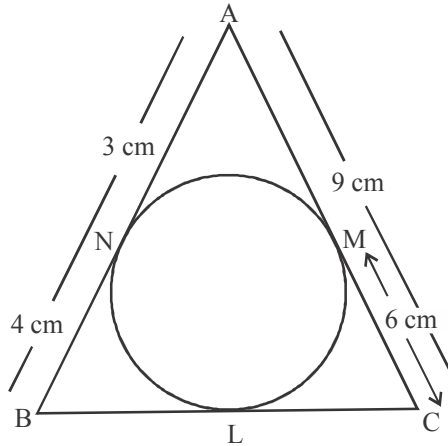
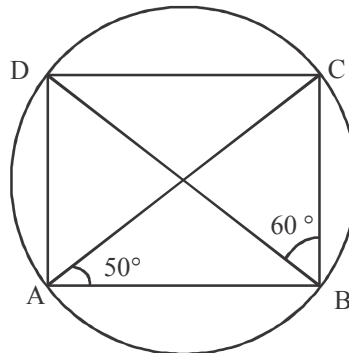


VERY SHORT ANSWER TYPE QUESTIONS

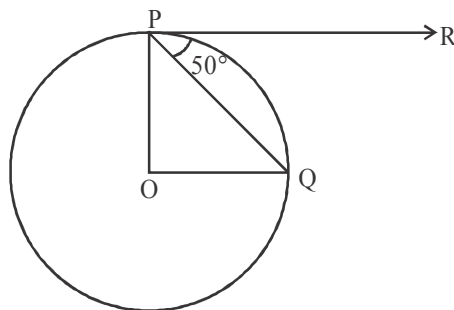
1. In fig., $\triangle ABC$ is circumscribing a circle. Find the length of BC.



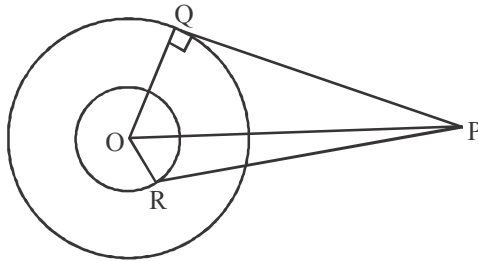
2. The length of the tangent to a circle from a point P, which is 25 cm away from the centre, is 24 cm. What is the radius of the circle.
3. In fig., ABCD is a cyclic quadrilateral. If $\angle BAC = 50^\circ$ and $\angle DBC = 60^\circ$, then find $\angle BCD$.



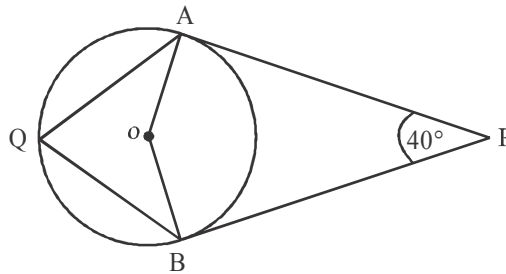
4. In figure, O is the centre of a circle, PQ is a chord and the tangent PR at P makes an angle of 50° with PQ. Find $\angle POQ$.



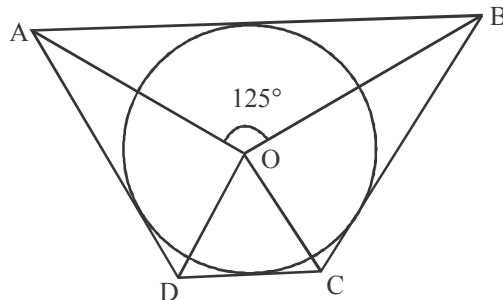
5. If two tangents inclined at an angle 60° are drawn to a circle of radius 3 cm, then find the length of each tangent.
6. If radii of two concentric circles are 4 cm and 5 cm, then find the length of each chord of one circle which is tangent to the other circle.
7. In the given figure, PQ is tangent to outer circle and PR is tangent to inner circle. If $PQ = 4\text{cm}$, $OQ = 3\text{ cm}$ and $QR = 2\text{ cm}$ then find the length of PR.



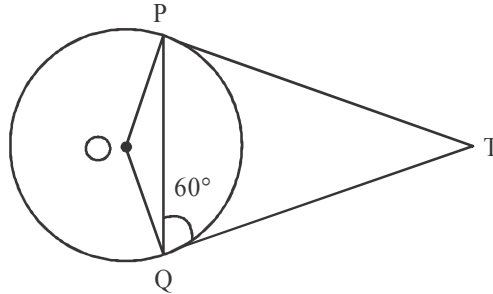
8. In the given figure, O is the centre of the circle, PA and PB are tangents to the circle then find $\angle AQB$.



9. In the given figure, If $\angle AOB = 125^\circ$ then find $\angle COD$.

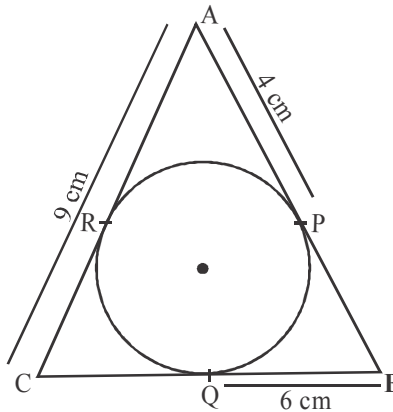


10. If two tangent TP and TQ are drawn from an external point T such that $\angle TQP = 60^\circ$ then find $\angle OPQ$.



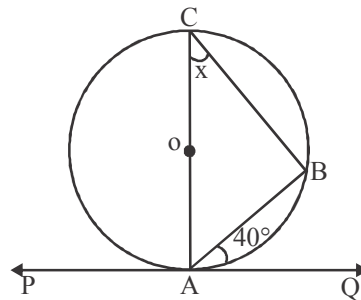
SHORT ANSWER TYPE-I QUESTIONS

11. If diameters of two concentric circle are d_1 and d_2 ($d_2 > d_1$) and C is the length of chord of bigger circle which is tangent to the smaller circle. Show that $d_2^2 = C^2 + d_1^2$.
12. The length of tangent to a circle of radius 2.5 cm from an external point P is 6 cm. Find the distance of P from the nearest point of the circle.
13. TP and TQ are the tangents from the external point T of a circle with centre O. If $\angle OPQ = 30^\circ$ then find the measure of $\angle TQP$.
14. In the given fig. AP = 4 cm, BQ = 6 cm and AC = 9 cm. Find the semi perimeter of $\triangle ABC$.

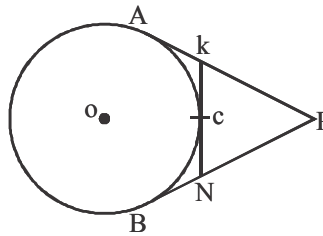


15. A circle is drawn inside a right angle triangle whose sides are a, b, c where c is the hypotenuse, which touches all the sides of the triangle. Prove $r = \frac{a + b - c}{2}$ where r is the radius of the circle.

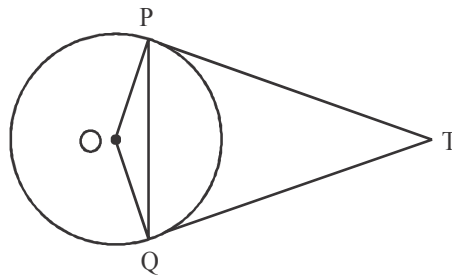
16. Prove that the tangent at any point of a circle is perpendicular to the radius through the point of contact.
17. Prove that in two concentric circles the chord of the larger circle which is tangent to the smaller circle is bisected at the point of contact.
18. In the given Fig., AC is diameter of the circle with centre O and A is point of contact, then find x .



19. In the given fig. PA and PB are tangents to the circle. Prove that:
 $KN = AK + BN$.

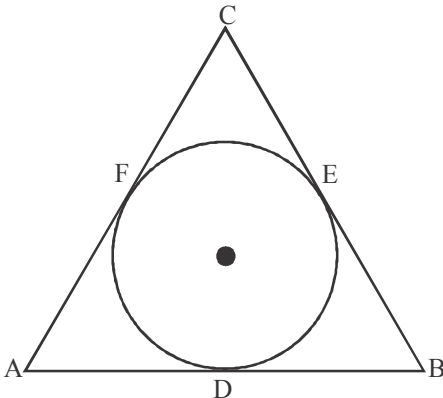


20. In the given fig. PQ is a chord of length 6 cm and the radius of the circle is 6 cm. TP and TQ are two tangents drawn from an external point T. Find $\angle PTQ$.

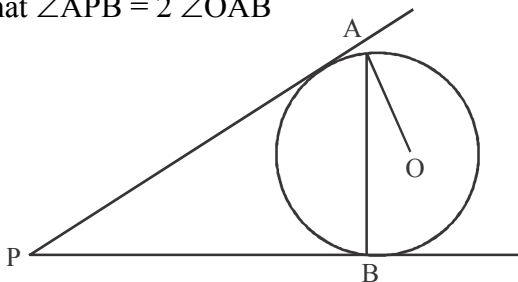


SHORT ANSWER TYPE-II QUESTIONS

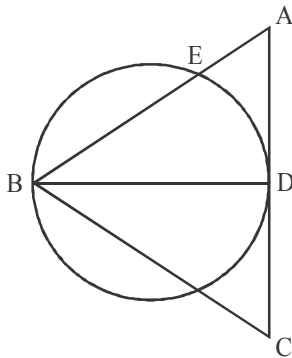
21. In the given figure find AD, BE, CF where AB = 12 cm, BC = 8 cm and AC = 10 cm.



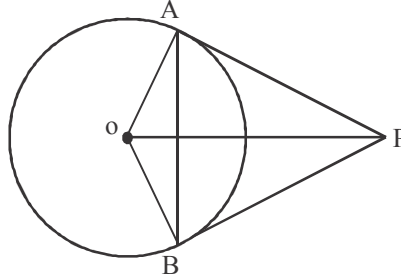
22. In a right triangle ABC a circle is drawn with AB as the diameter which intersects hypotenuse AC at point P. Prove $PB = PC$.
23. Two tangents PA and PB are drawn to a circle with centre O from an external point P. Prove that $\angle APB = 2 \angle OAB$



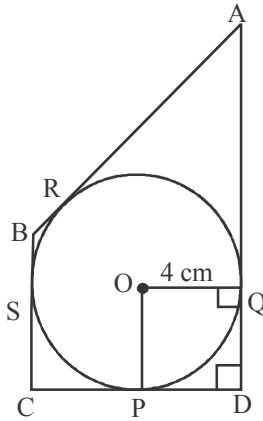
24. If an equilateral triangle ABC with sides $AB = AC = 6$ cm is drawn inside a circle of radius 9 cm, find area of the triangle.
25. In the given fig. $AB = AC$, D is the mid point of AC, BD is the diameter of the circle, then prove $AE = \frac{1}{4} AC$



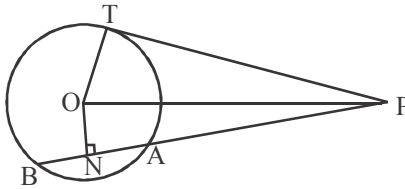
26. In the given fig. OP is equal to the diameter of the circle with centre O. Prove that $\triangle ABP$ is an equilateral triangle.



27. In the given fig., Find PC.

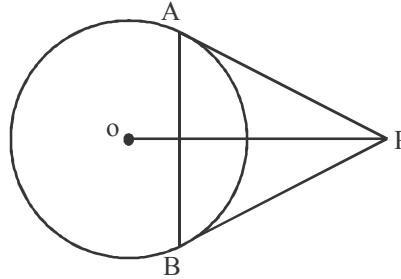


28. In the given fig. from an external point P, a tangent PT and a secant PAB is drawn to a circle with centre O. ON is perpendicular on the chord AB. Prove
- $PA \cdot PB = PN^2 - AN^2$
 - $PN^2 - AN^2 = OP^2 - PT^2$
 - $PA \cdot PB = PT^2$



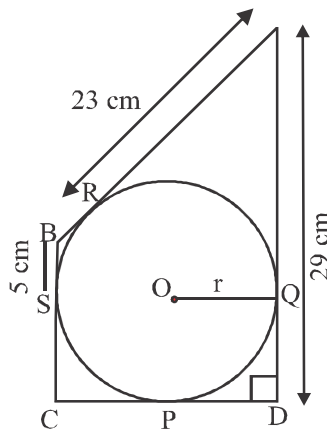
29. In a circle with centre O, AB is a diameter and AC is the chord and $\angle BAC = 30^\circ$. A tangent AB drawn at the point C when extended meets D. Prove $BC = BD$.

30. In the given fig. PA and PB are tangents to the circle with centre O. Prove that OP bisects AB and is perpendicular to it.

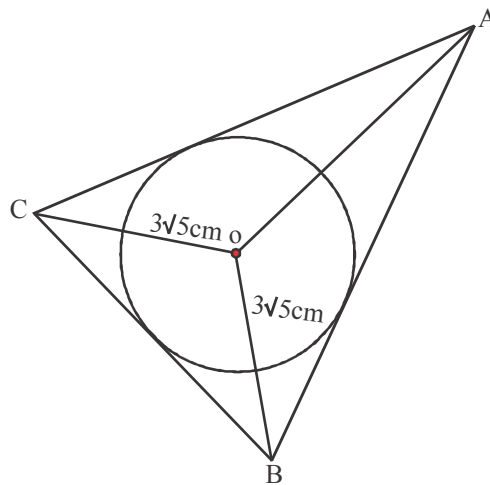


LONG ANSWER TYPE QUESTIONS

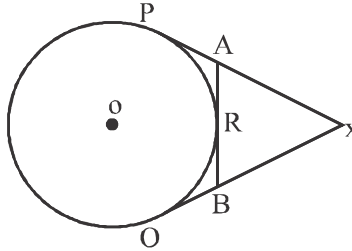
31. In the given fig. find the radius of the circle.



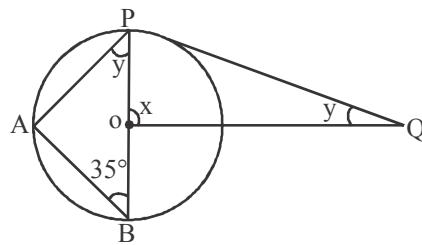
32. In the given fig. if radius of circle is 3 cm. Find the perimeter of $\triangle ABC$.



33. A circle touches the side BC of a $\triangle ABC$ at P and AB and AC are extended respectively to points Q and R. Prove that AQ is half the perimeter of $\triangle ABC$.
34. In the given fig. XP and XQ are tangents from X to the circle with centre O. R is a point on the circle. Prove that $XA + AR = XB + BR$.

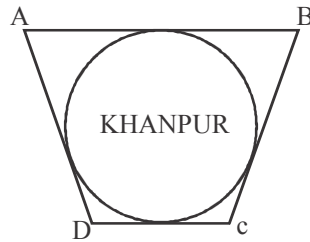


35. In the given fig. PQ is tangent and PB is diameter. Find the value of x and y .



36. The distance between villages A and B is 7 km, B and C is 5 km and C and A is 8 km. The Pradhan of village wants to build a well which is equidistant from each villages.
- Find the location of well?
 - What values are depicted by this action of Pradhan?
37. The villagers wants to construct a road around a circular village. The Road cannot pass through inside the village. The villagers wants that the road should be at shortest distance from the centre of the circular village.
- Which road will be at minimum distance from the centre of the village?
 - Which values are depicted through the life of villagers?
38. In the given figure four roads touch to a circular village Khanpur of radius 1700 m. Savita got a contract for constructing road AB and CD while Vijay to construct road AD and BC.
- Prove $AB + CD = AD + BC$

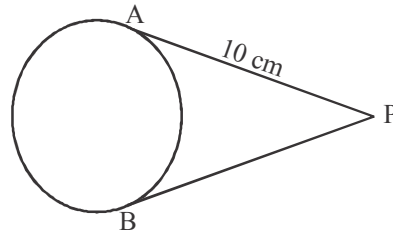
(ii) Which value is depicted in this questions?



39. Two roads starting from point P touch a circular path at A and B as shown in the Figure. Sarita walks 10 km from P to A and Ramesh goes from P to B at the same time.

(i) If Sarita wins in this race then find the distance covered by Ramesh.

(ii) What value is depicted here.

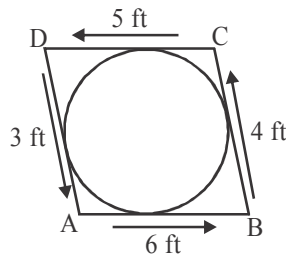


40. One day Rahim while coming to his house found a circular pit on the road. He immediately informed Municipal corporation about the pit. Municipal corporation installed wire around the pit.

(i) Find the total length of wire.

(ii) Which concept of mathematics is used to find the answer?

(iii) Which values of Rahim are depicted here?



ANSWERS

1. 10 cm
2. 7 cm
3. 70°
4. 100°
5. $3\sqrt{3}$ cm
6. 6 cm
7. $\sqrt{21}$ cm
8. 70°
9. 55°
10. 30°
12. 4 cm
13. 60°
14. 15 cm
18. 40°
20. 120°
21. AD = 7 cm, BE = 5 cm, CF = 3 cm
24. $8\sqrt{2}$ cm³
27. 5 cm
31. 11 cm
32. 32 cm
35. $x = 35^\circ, y = 55^\circ$
36. (i) A, B, C, are on circumference of the circle and well at the centre.
(ii) Equality, Love & Care, Humanity
37. (i) Tangent (ii) Economic value
38. (ii) Gender equality
39. (i) 10 km (ii) Gender equality, Healthy competition
40. (i) 36 feet
(ii) tangent are equal from the external point
(iii) Moral and social responsibility, logical reasoning.