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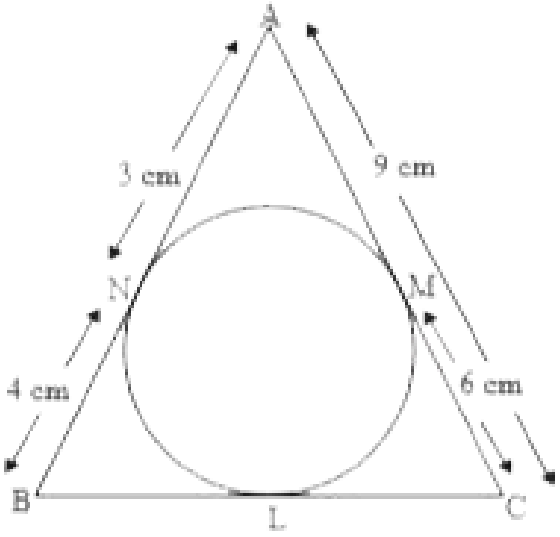
MATHS

BOOKS - CBSE COMPLEMENTARY MATERIAL MATHS (HINGLISH)

CIRCLES

Very Short Answer Type Questions

1. In fig., ΔABC is circumscribing a circle. Find the length of BC.



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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.

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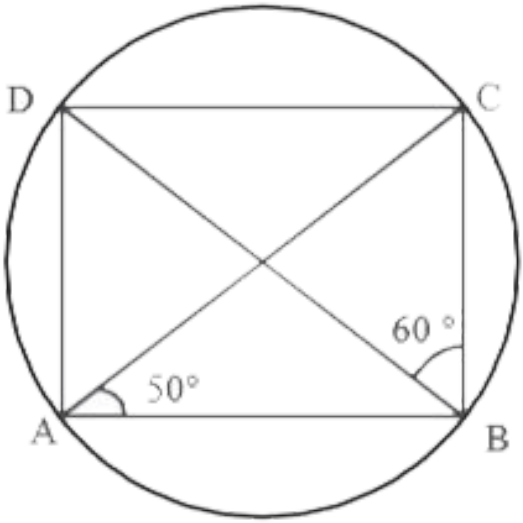
3. In fig., ABCD is a cyclic quadrilatreral. If $\angle BAC = 50^\circ$ and $\angle DBC = 60^\circ$, then find $\angle BCD$.



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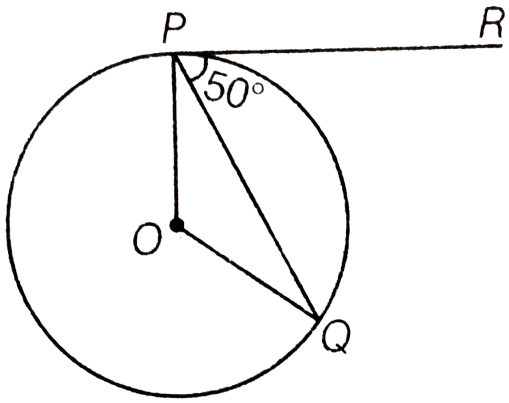
4. In figure, if 0 is the centre of a circle, PQ is a chord and the tangent PR at P makes an angle of 50° with PQ, then $\angle POQ$ is equal to



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5. If two tangents inclinced at an angle 60° are drawn to a circle of radius 3 cm, then find

the length of each tangent.

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6. If radii of two concentric circles are 4 cm and 5 cm, then length of each chord of one circle which is tangent to the other circle, is

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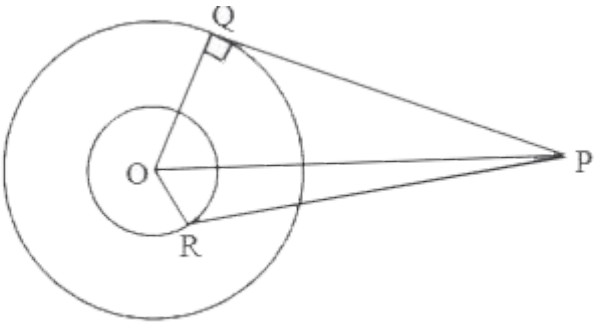
7. In the given figure, PQ is tangent to outer circle and PR is tangent to inner circle. If PQ =

4cm, OQ = 3 cm and OR = 2 cm then find the length of PR.



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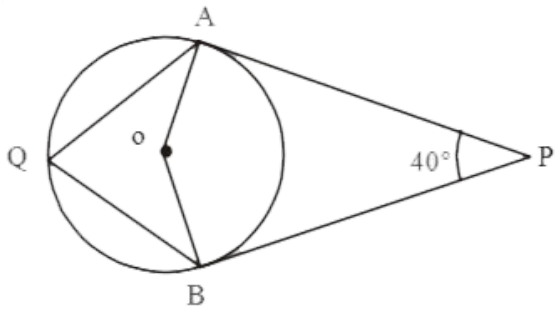
8. In the given figure, O is the centre of the circle, PA and PB are tangents to the circle

then find $\angle AQB$.



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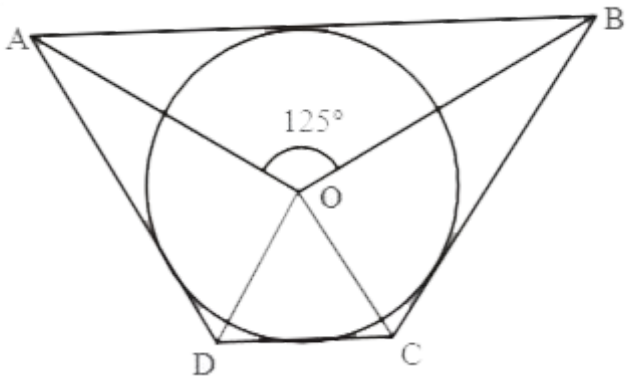
9. In the given figure, If $\angle AOB = 125^\circ$ then find $\angle COD$.



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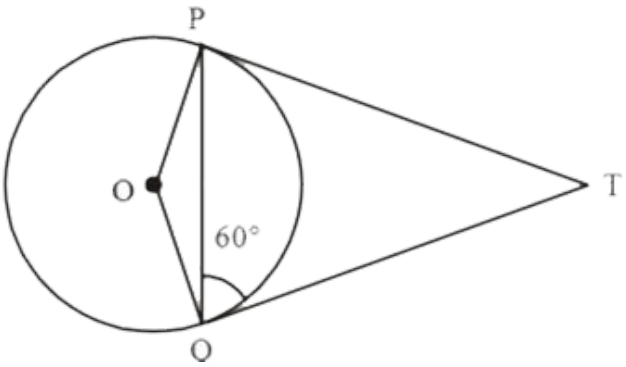
10. If two tangent TP and TQ are drawn from an external point T such that $\angle TQP = 60^\circ$

then find $\angle OPQ$.



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11. How many tangents can a circle have?

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12. A tangent to a circle intersects it in _____ points.

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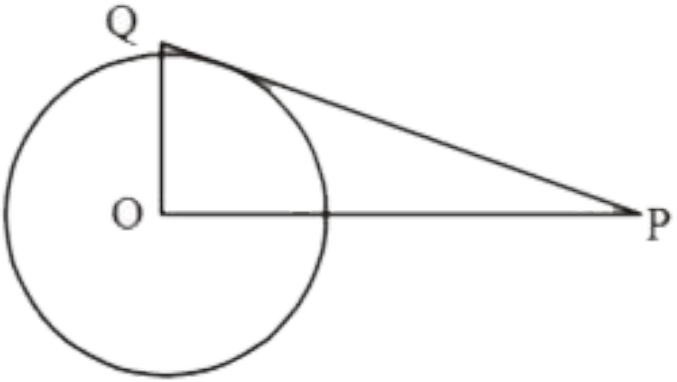
13.



If PQ is a tangent then find the value of $\angle(POQ) + \angle(QPO)$.

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14. Tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 12 cm. Find length of PQ

A. 12 cm

B. 13 cm

C. 8.5 cm

D. $\sqrt{119}cm$

Answer: $D\left(\sqrt{119}cm\right)$

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15. Fill in the blanks: The common point of a tangent and the circle is called..... A circle may have ..... parallel tangents. A tangent to a circle intersects it in ..... point(s). A line intersecting a circle in two points is called a ..... (v) The angle between tangent at a point on a circle and the radius through the point is .....

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16. Fill in the blanks: The common point of a tangent and the circle is called..... A circle may have ..... parallel tangents. A tangent to a circle intersects it in ..... point(s). A line intersecting a circle in two points is called a ..... (v) The angle between tangent at a point on a circle and the radius through the point is .....

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Short Answer Type I Questions

1. If d_1, d_2 (d_2>d_1) be the diameters of two concentric circles and c be the length of a chord of a circle which is tangent to the other circle prove that $d_2^2 = c^2 + d_1^2$

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2. 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.

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3. 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 $\angle TQP$.

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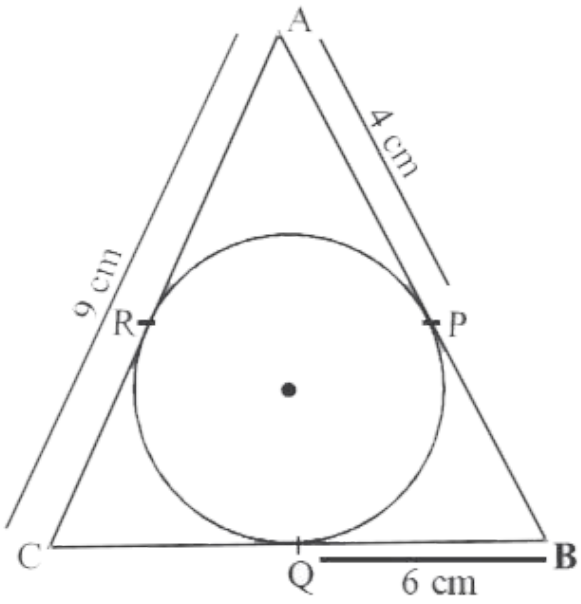
4. In the given fig. AP = 4 cm, BQ = 6 cm and AC = 9 cm. Find the semi perimeter of ΔABC.



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5. If a,b,c are the sides of a right triangle , where c is the hypotenuse. Prove that the

radius r of the circle which touches the sides of the triangle is given by:$r = \frac{a + b - c}{2}$

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

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7. Prove that in two concentric circles, the chord of the larger circle which touches the smaller circle is bisected at the point of contact.

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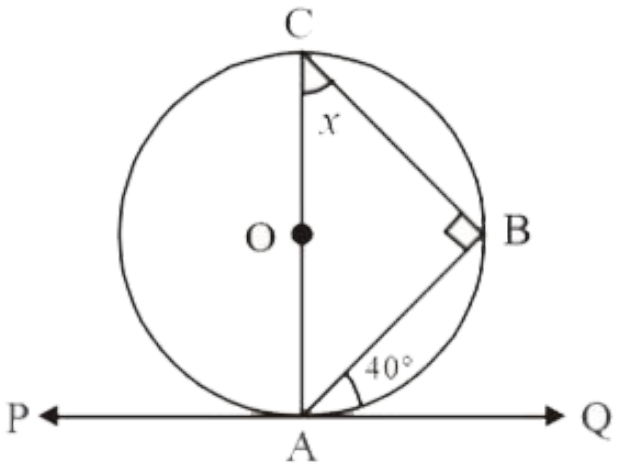
8. In the given Fig., AC is diameter of the circle with centre O and A is point of contact, then

find x.



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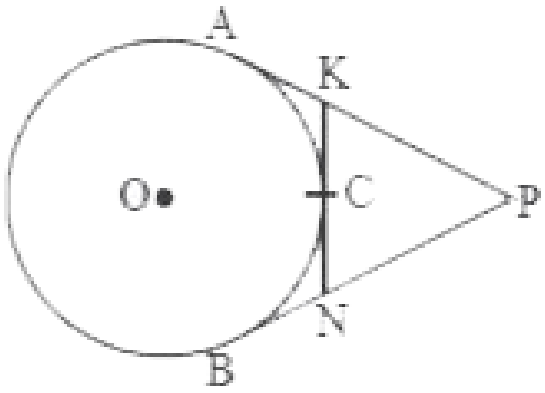
9. In the given fig. KN, PA and PB are tangents to the circle. Prove that : $KN = AK + BN$.



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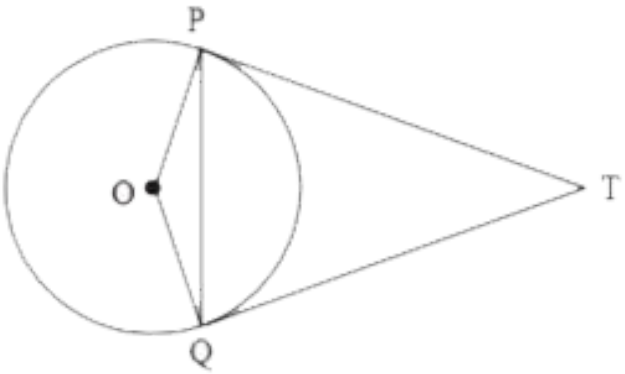
10. In the given fig. PQ is a chord of length 6 cm and the radius of the circle is 6 cm. TP and TQ are two tangents drawn from an external

point T. Find $\angle PTQ$.



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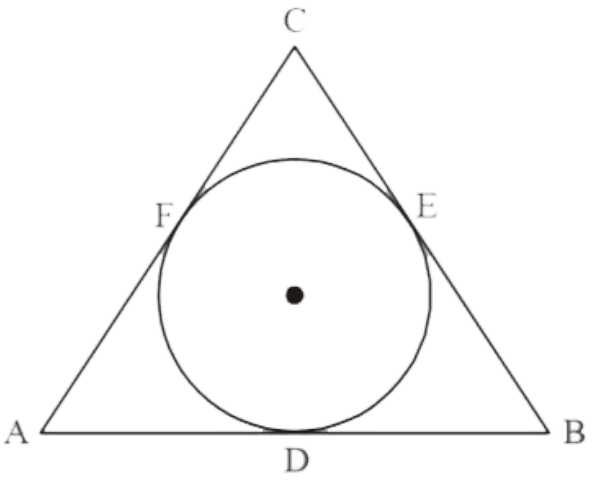
Short Answer Type Ii Questions

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



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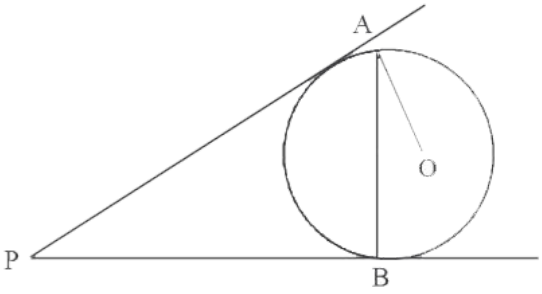
2. Two tangents PA and PB are drawn to a circle with centre O from an external point P.

Prove that $\angle APB = 2\angle OAB$



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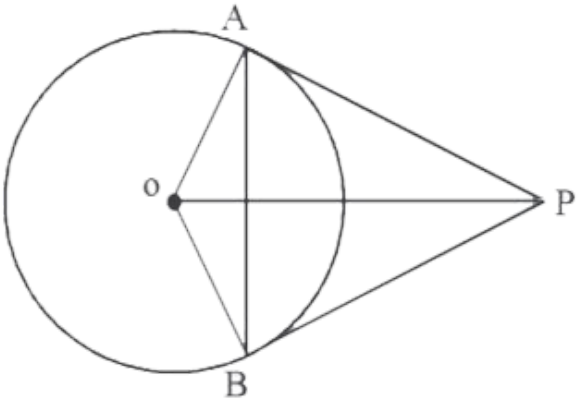
3. In the given fig. OP is equal to the diameter of the circle with centre O. Prove that ΔABP is

an equilateral triangle.



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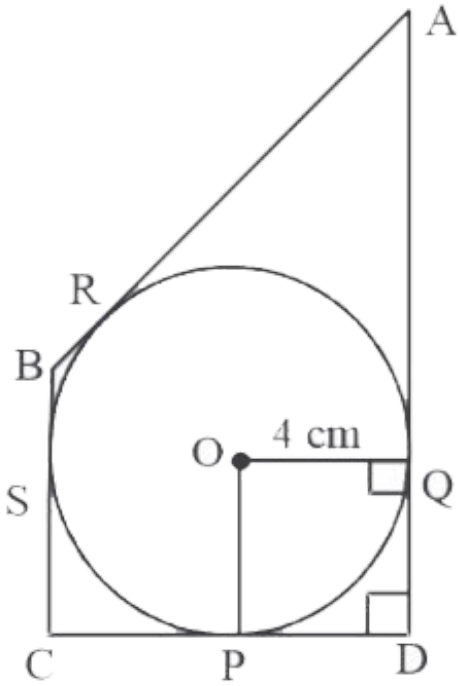
4. In the given fig., find PC. If AB = 13 cm, BC = 7 cm and AD = 15 cm.



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Long Answer Type Questions

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

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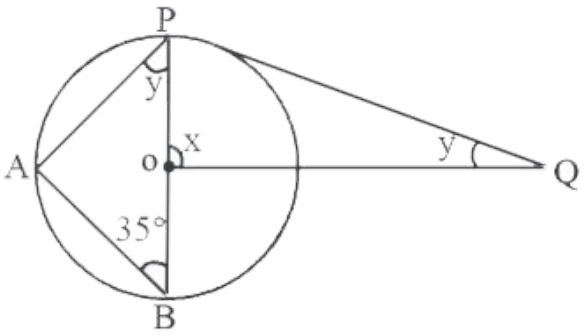
2. In the given fig. PQ is tangent and PB is diameter. Find the value of x and y.



A. $x=35^\circ$ & $y=55^\circ$

B. $x=25^\circ$ & $y=55^\circ$

C. $x=35^\circ$ & $y=95^\circ$

D. None

Answer: A

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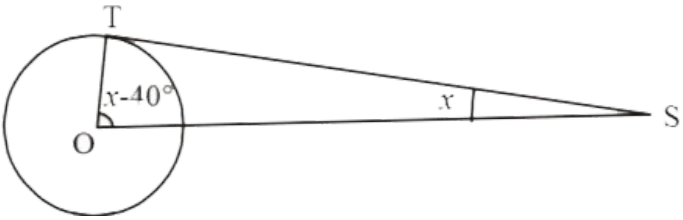
Practice Test Section A

1. In the given figure find x, where ST is the tangent.



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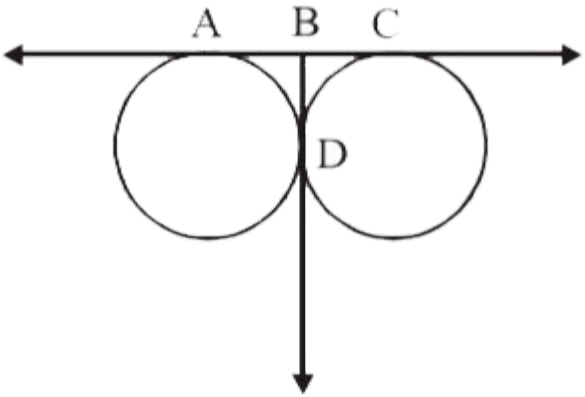
2. In the given figure if AC = 9, find BD.



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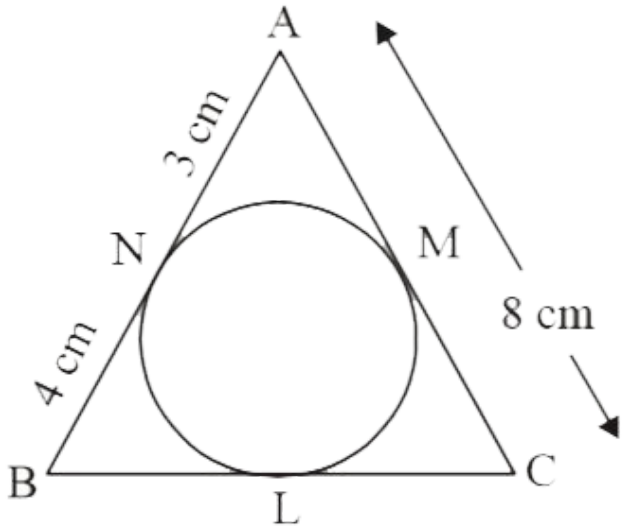
3. In the given figure, ΔABC is circumscribing a circle, then find the length of BC.



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4. From the external point P tangents PA and PB are drawn to a circle with centre O. If $\angle PAB = 50^\circ$, then find $\angle AOB$.

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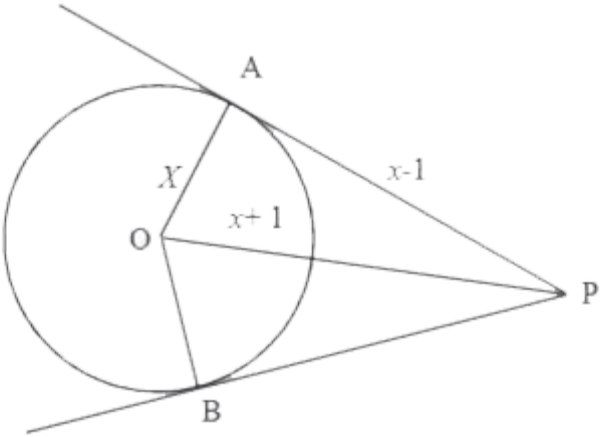
Practice Test Section B

1. In the following figure find x.



A. x=5

B. x=4

C. x=3

D. x=2

Answer: B

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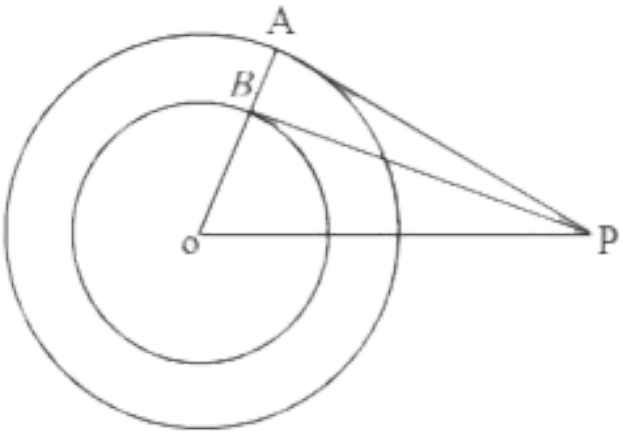
2. Two concentric circle with centre O are of radii 6 cm and 3 cm. From an external point P, tangents PA and PB are drawn to these circle as shown in the figure. If AP = 10 cm. Find BP



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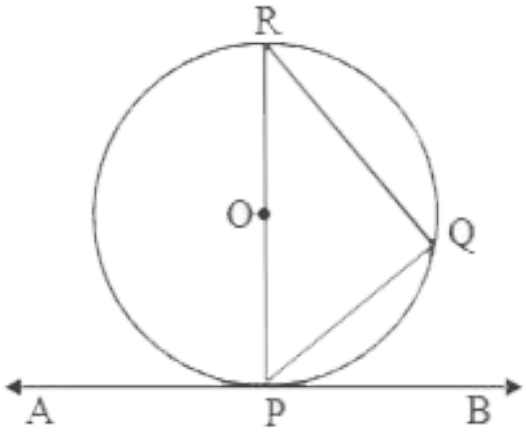
Practice Test Section C

1. In the given figure, AB is a tangent to a circle with centre O. Prove $\angle BPQ = \angle PRQ$.



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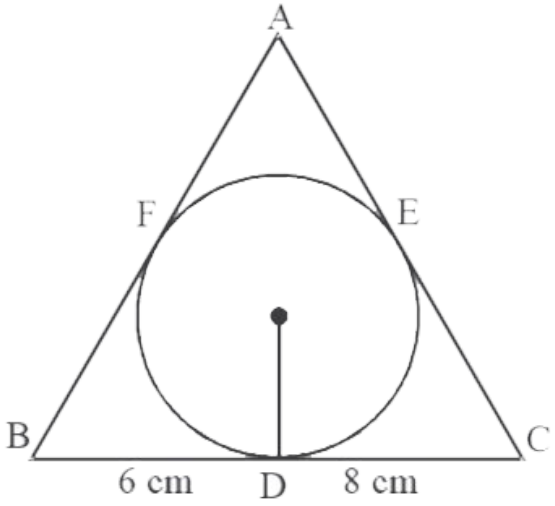
2. In the given figure ΔABC is drawn to circumscribe a circle of radius 3 cm, such that the segment BD and DC into which BC is divided by the point of contact D are of length 6 cm and 8 cm respectively, find side AB if the ar $(\Delta ABC) = 63cm^2$



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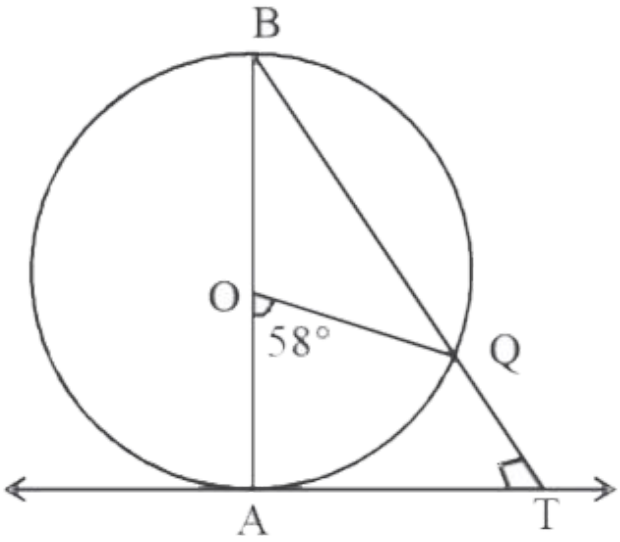
Practice Test Section D

1. AB is a diameter of a circle with centre O and AT is a tangent. If $\angle AOQ = 58^\circ$ find $\angle ATQ$.



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