QB 365

Important Questions - Circles

10th Standard CBSE

Maths

Reg.No. : | | | | | | |

Time : 01:00:00 Hrs

Total Marks : 50

Section - A

1) If a line and a circle have no point common, then the line lies **1**

2) A tangent to a circle intersects it in ..... point(s). **1**

3) A tangent is always ..... to the radius at the point of contact. **1**

4) If TP and TQ are two tangents to a circle with centre O such that $\angle POQ = (2x + 3)^\circ$ and, $\angle PTQ = (3x - 8)^\circ$ then the value of x is..... **1**

5) If angle between two radii of a circle is 130°. The angle between the tangents at the ends of the radii is..... **1**

6) If PQ and PR are two tangents to a circle with centre O. If $\angle QPR = 46^\circ$ find $\angle QOR$ **1**

7) In the figure, PA and PB are tangents to a circle with centre O. If $\angle AOB = 120^\circ$, then find $\angle OPA$ **1**

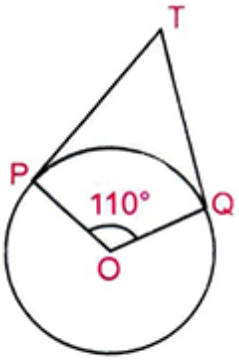
8) If the angle between two radii of a circle is 130°, then what is the angle between the tangents at the end points of radii at their point of intersection? **1**

9) In the given figure, find $\angle QSR$. **1**

10) A triangle ABC is drawn to circumscribe a circle. If AB = 13 crn, BC = 14 cm and AE = 7 crn, then find AC. **1**

Section - B

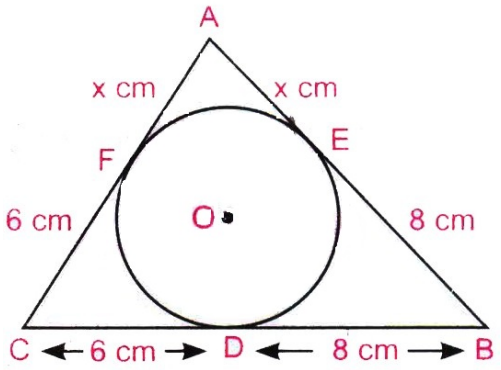
11) In figure, if TP and Tq are the two tangents to a circle with centre O so that $\angle POQ = 110^0, \ then \ \angle PTQ$ is equal to **2**



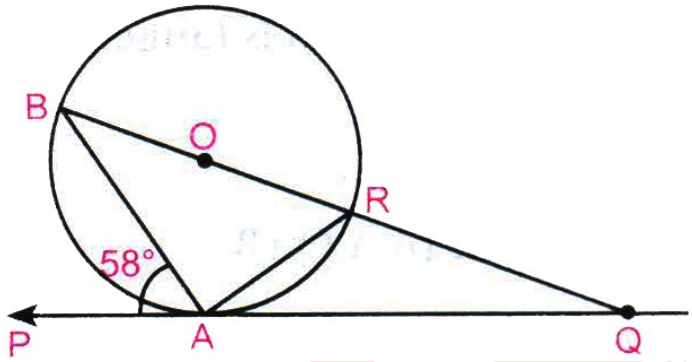
(a)60^0 (b)70^0

(c)80^0 (d)90^0

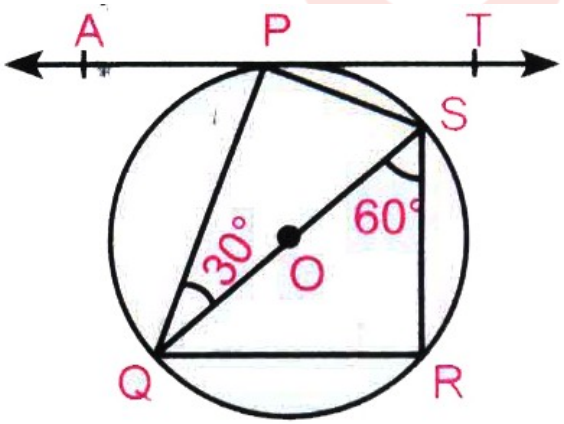
12) A triangle ABC is drawn to circumscribe a circle of radius 4cm such that the segments BD and DC into which BC divided by the point of contact D are of lengths *cm and 6cm respectively (see figure).Find the sides AB and AC **2**



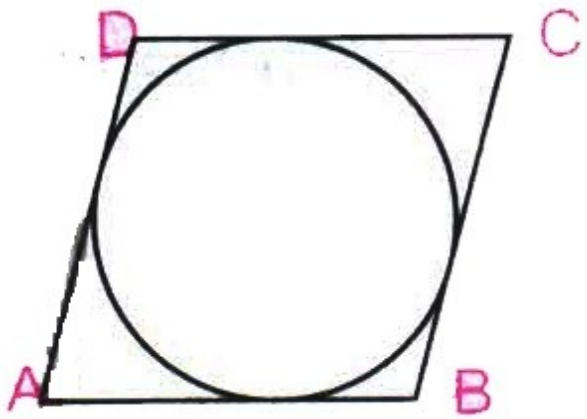
13) In figure, O is the centre of the circle, PQ is a tangent to the circle at A.If $\angle PAB = 50^0$ $find$ $\angle ABQ$ and $\angle AQB$. **2**



14) In the following figure, QS is the diameter and O is the centre of circle.APT is the tangent at P.Find $\angle APQ$. **2**

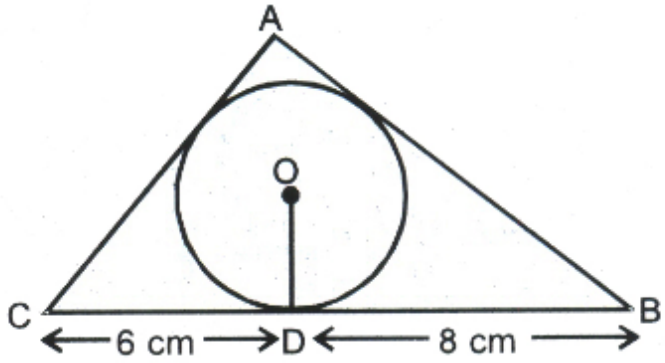


15) Prove that the lengths of tangents drawn from an external point to a circle are equal.Using the above, prove the following: A quadrilateral ABCD is drawn to circumscribe a circle.Prove that AB+CD=AD+BC. **2**

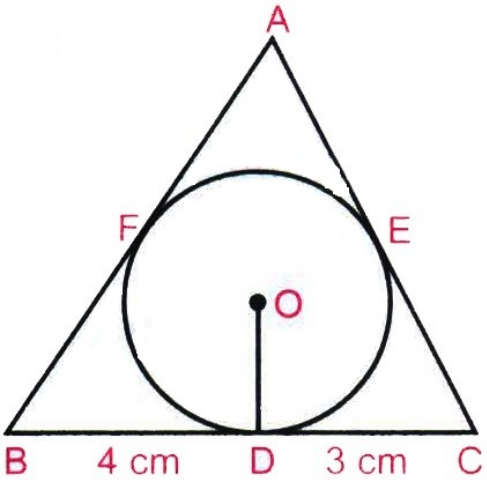


16) Distance between two parallel line is 24cm.What will be the radius of circle, drawn in such a way that it touches both the lines? **2**

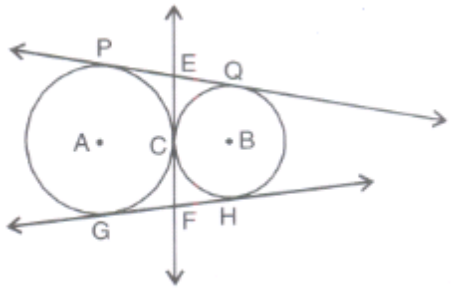
17) A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of length 8 cm and 6 cm respectively. Find the sides AB and AC. **2**



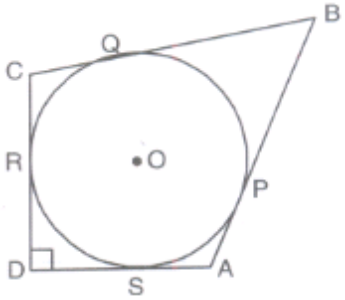
18) In figure, a triangle ABC is drawn to circumscribe a circle of radius 2cm such that the segments BD and DC into which BC is divided by the point of contact D are the lengths 4cm and 3cm respectively.If area of $\Delta ABC = cm^2$, then find the lengths of sides AB and AC. **2**



19) In fig., two circles touch each other externally at C. Prove that the common tangent at C bisects the other two common tangents. **2**



20) In the figure, $\angle ADC = 90^\circ$, BC = 38 cm, CD = 28 cm and BP = 25 cm. Find the radius of the circle. **2**



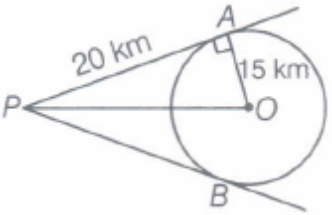
Section - C

21) Two roads starting from P are touching a circular path at A and B.Sarita runs from P to A, 20 km and A to 0, 15 km and Rita runs from P to 0 directly. **5**

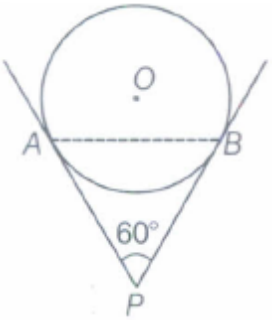
(i) Find the distance covered by Rita.

(ii)Who will win the race?

(iii)Which value is depicted by Rita?



22) As a part of a campaign, a huge balloon with message of ''AWARENESS OF CANCER" was displayed from the terrace of a tall building. It was held by strings of length 8 m each and inclined at an angle of 60° at the point, where it was tied as shown in the figure. **5**



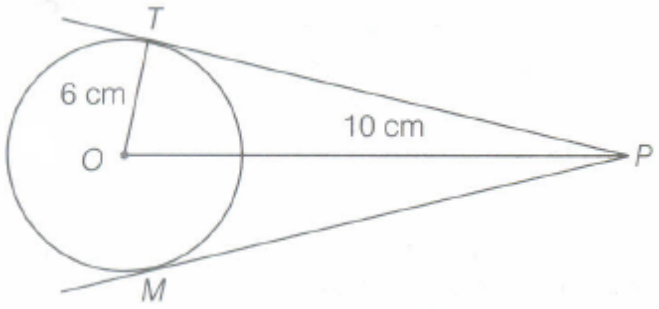
(i) What is the length of AB?

(ii) If the perpendicular distance from the centre of the circle to the chord AB is 3 m, then, find the radius of the circle.

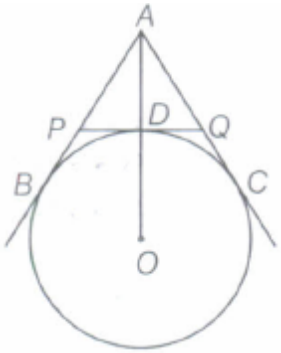
(iii) Which method should be apply to find the radius of circle?

(iv) What do you think of such campaign?

23) In the given figure, PT and PM are two tangents to the circle with centre O. If OT = 6 cm and OP = 10 cm. then find the length of PT and PM. **5**



24) For a science Exhibition, Rahul presented a diagrammatic representation of rain water harvesting as a project. AB and AC, the pipes of 12 m long are bringing water from the terrace of a building (as shown in the figure). The triangular space is developed as a garden. **5**



(i) What is the perimeter of the triangular garden?

(ii) If the radius of circle is 5 cm, then find the length of OA.

(iii) What qualities do you think is encouraged by such exhibitions?

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