



**INDIAN SCHOOL DARSAIT**  
**DEPARTMENT OF MATHEMATICS**  
**WORKSHEET # 15**



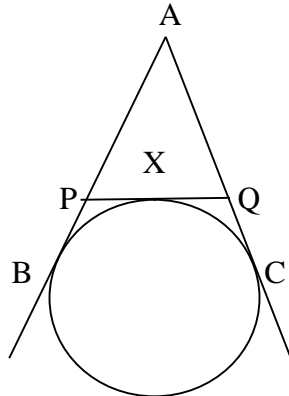
Subject : MATHEMATICS	Topic : CIRCLES	Date of Worksheet : 20/11/2017
Resource Person: Mrs. Indu .P		Date of submission : 30/11/2017
Name of the Student _____	Class & Division: _____	Roll Number : ____

**S.No. Section A-[Basic skills]**

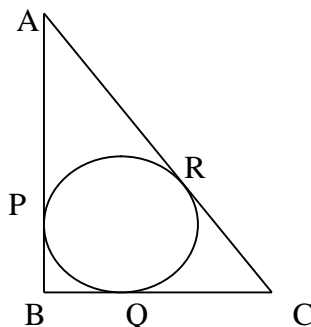
1.  $\frac{3}{10} + \frac{1}{100} =$
2.  $45.5 \times 200 =$
3.  $100000 - 239$
4. Solve for x :  $\frac{x}{4} = x + 7$
5. Solve for x :  $2 = x + \frac{3}{10}$

**Sl.No. Section B -[Chapter based questions] Marks**

1. At one end of a diameter PQ of a circle of radius 5 cm , tangent XPY is drawn to the circle. What is the length of the chord AB parallel to XY and at a distance of 8 cm from P 2
2. PQ is a tangent to a circle with centre O at the point P. If  $\Delta OPQ$  is an isosceles triangle, then find the measure of  $\angle OQP$ . 2
3. If AB , AC and PQ are tangents in the given figure and  $AB = 5\text{cm}$  , find the perimeter of  $\Delta APQ$ . 3



4. In the figure , ABC is a right angled at B such that  $BC = 6\text{ cm}$  and  $AB = 8\text{ cm}$ . Find the radius of its incircle. 4

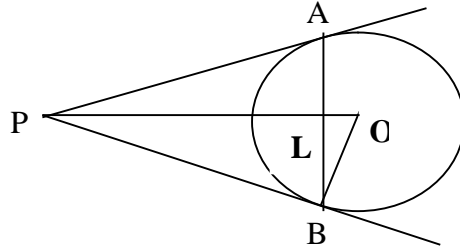




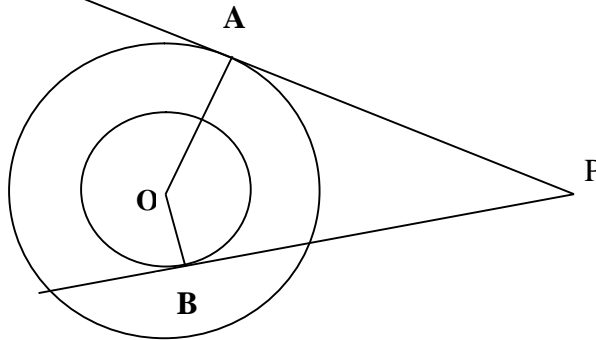
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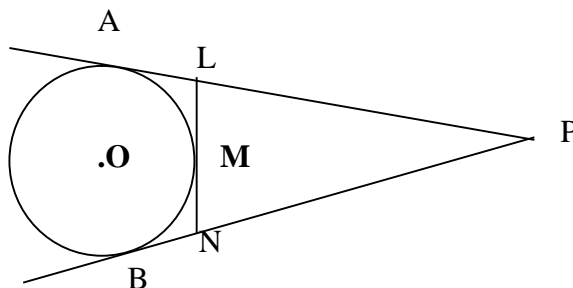
5. If  $\triangle ABC$  is isosceles with  $AB = AC$  and  $C(O, r)$  is the incircle of the  $\triangle ABC$  touching  $BC$  at  $L$ , prove that  $L$  bisects  $BC$ . 3
6. In the figure,  $AB$  is a chord of length 16 cm of a circle of radius 10 cm. The tangents at  $A$  and  $B$  intersect at a point  $P$ . Find the length of  $PA$ . 4



7. If the sides of a quadrilateral touch a circle, prove that the sum of a pair opposite sides is equal to the sum of the other pair. 3
8. In the figure, there are two concentric circles with centre  $O$  of radii 5 cm and 3 cm. From an external point  $P$ , tangents  $PA$  and  $PB$  are drawn to these circles. If  $AP = 12$  cm, find the length of  $BP$ . 2



- 9.. In figure  $PA$  and  $PB$  are tangents drawn from an external point  $P$  to a circle with centre  $O$ .  $LN$  touches the circle at  $M$ . Prove that  $PL + LM = PN + MN$ . 4



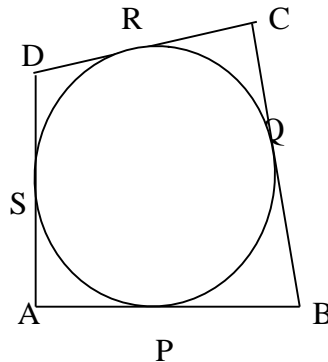
10. Two tangents  $PA$  and  $PB$  are drawn to a circle with centre  $O$  such that  $\angle APB = 120^\circ$ . Prove that  $OP = 2AP$ . 4



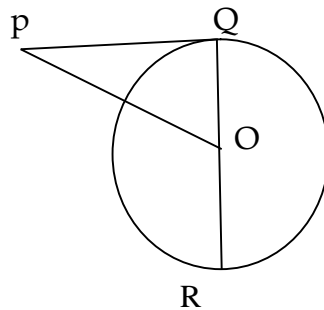
**INDIAN SCHOOL DARSAIT**  
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**CIRCLES [HOT QUESTIONS]**



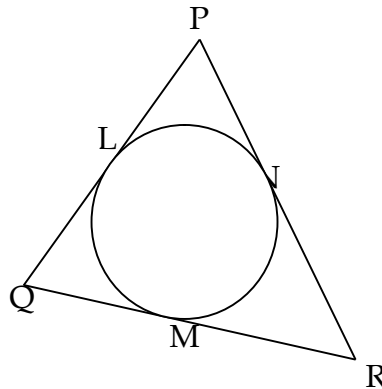
1. In figure , a circle touches all the four sides of a quadrilateral ABCD with  $AB = 6$  cm ,  $BC = 7$ cm and  $CD = 4$  cm . Find AD. 4



2. In the given figure  $OQ : PQ = 3 : 4$  and perimeter of  $\triangle POQ = 60$  cm. Find the length of PQ, QR and OP. 4



3. In the given figure, a circle is inscribed in  $\triangle PQR$  with  $PQ = 10$  cm,  $QR = 8$  cm and  $PR = 12$  cm. Find the lengths of QM, RN and PL. 4



4. If an isosceles triangle ABC in which  $AB = AC = 6$ cm is inscribed in a circle of radius 9cm , find the area of the triangle. 4

5. Two circles with centres A and B of radii 3 cm and 4 cm respectively intersect at two points C and D such that AC and BC are tangents to the two circles. Find the length of the common chord CD. 4

6. O is the centre of a circle of radius 5 cm . T is a point such that  $OT = 13$  cm and OT intersects the circle at E. If AB is the tangent to the circle at E , find the length of AB. 4