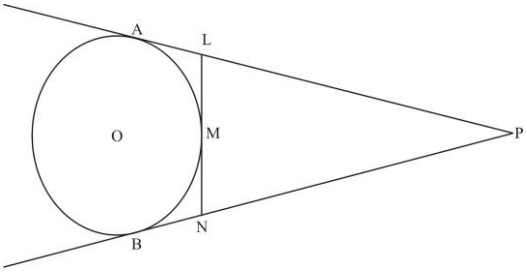
National Institute of Open Schooling (NIOS)
Secondary Course
Lesson –17: Secants, Tangents and their Properties
Worksheet – 17

1. Prove that from an external point only two tangents can possible to drawn and the length of these two tangents is same.

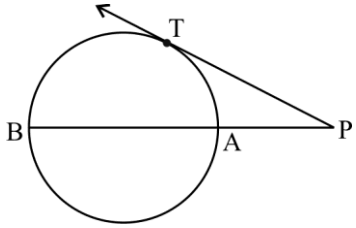
2. From the external point P two tangents PT1 and PT2 are at a distance of 10cm from the centre of the circle whose radius is 6cm. Find the length of two tangents PT1 and PT2.

3. If AB, AC, PQ are tangents and AB = 5cm, find the perimeter of ΔAPQ.

4. In figure, PA and PB are tangents from an external point P to a circle with center O. LN touches the circle at M. prove that PL + LM = PN + MN



5. In the figure, PAB is a secant and PT is a tangent to the circle from an external point P. If PT = x cm, PA = 4 cm and AB = 5 cm, find x.



6. Prove that angles formed in the alternate segments by a chord through the point of contact of a tangent to a circle are equal to the angles between the chord and the tangent.

7. If PAB is a secant to a circle intersecting the circle at A and B, PQ is a tangent to the circle at Q, then prove that PA × PB = PQ^2

8. Two circles touch externally at a point P, from a external point T a tangent TP is drawn. T tangents TQ and TR are drawn to the circles with points of contact Q and R respectively. Prove that TQ = TR

9. If PT and PS are tangents to a circle from an outside point P. such that PT = 8 cm and $\angle APB = 60^0$. Find the length of chord AB.

10. A tangent PT of a circle of radius 3 cm meets a line through the centre O at the point Q so that OQ = 5cm. find the length of PT.