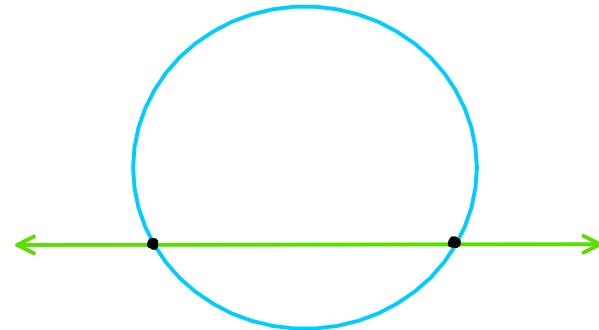
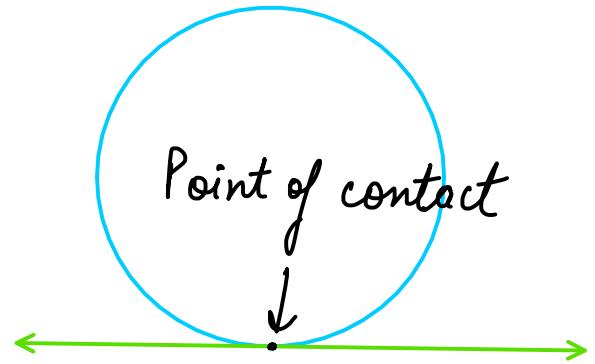


10 Circles



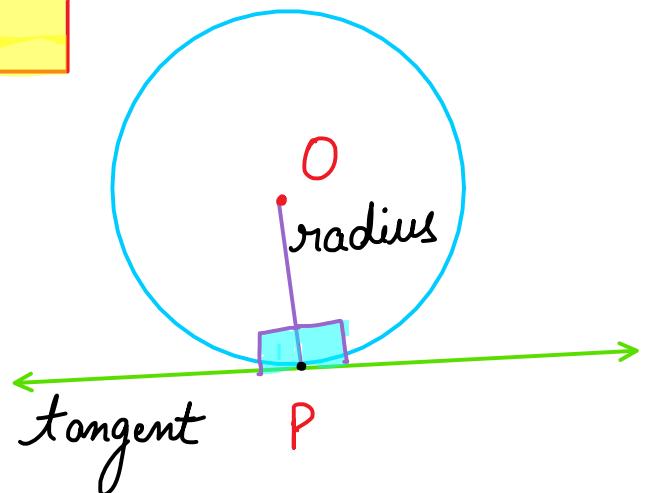
Secant of the circle :- A line which intersect the circle at two points.



Tangent to the circle :- A line which touches the circle at only one point.

Theorem - 10.1

tangent is perpendicular to
the radius

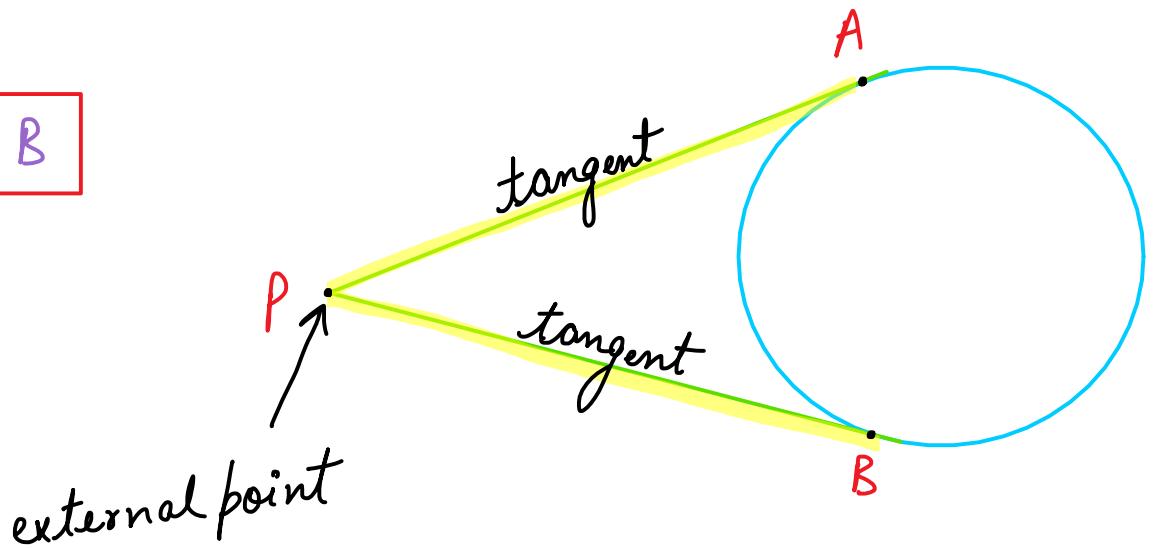


Theorem 10.2

tangents drawn from an external point are equal.

∴

$$PA = PB$$



Q → How many tangents are drawn from a point:

(i) inside the circle. 0 tangent

(ii) on the circle. 1 tangent

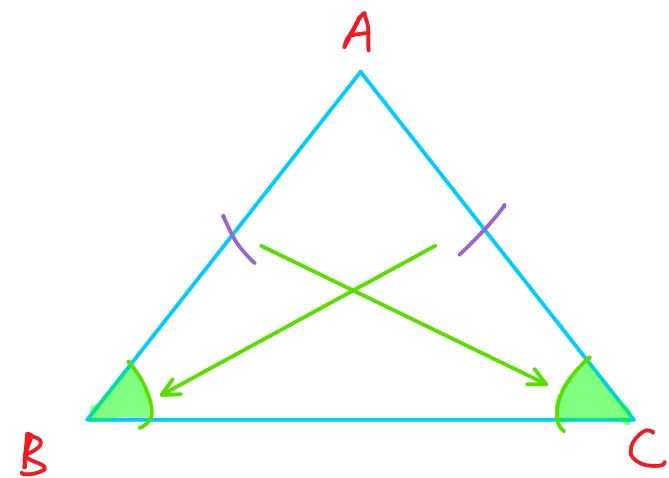
(iii) outside the circle. 2 tangents

Given:-

$$AB = AC$$

To prove:-

$$\angle C = \angle B$$



angle opposite to equal sides are also equal.

9th class

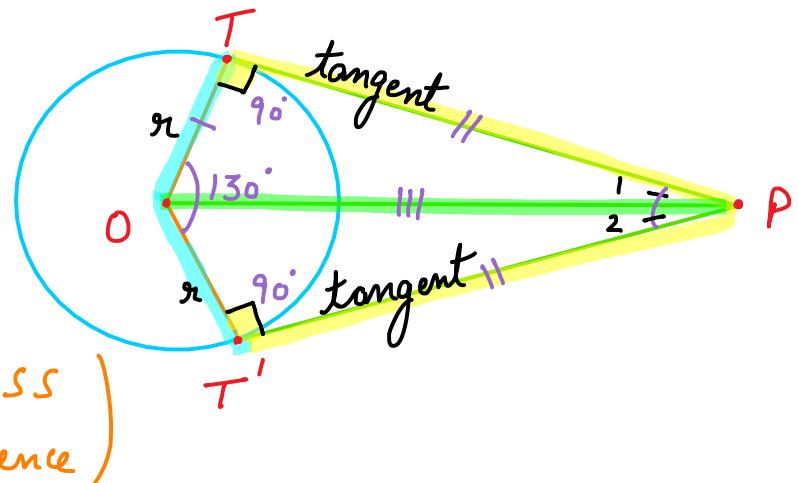
$$PT = PT' \quad \text{---} \quad (10.2)$$

$$OT = OT' \quad \text{(radii of circle)}$$

$$OP = OP \xrightarrow{\hspace{1cm}} (\text{common})$$

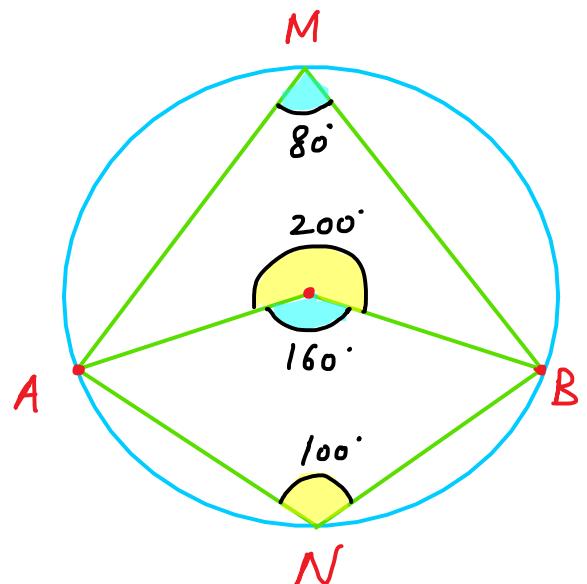
$$\therefore \Delta(OPT) \cong \Delta(O{T'}P)$$

By SSS
(congruence)



Centre lies at the angle bisector between the tangents.

angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of circle



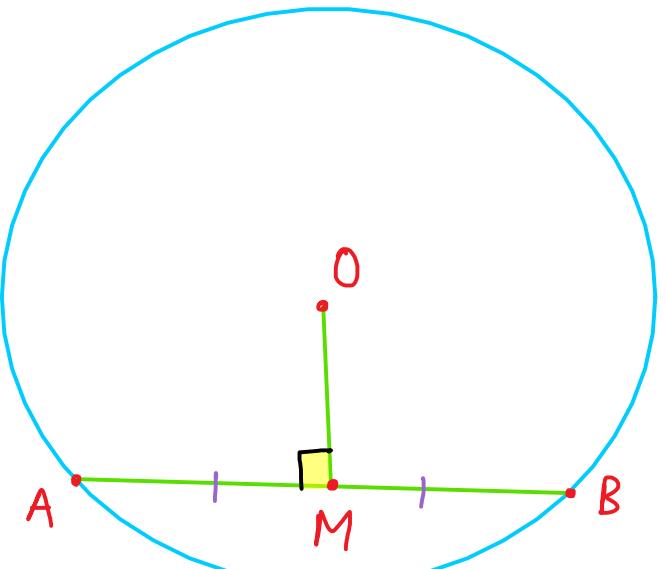
9th Class

Given :- $OM \perp AB$

Perpendicular from the
centre bisect the chord

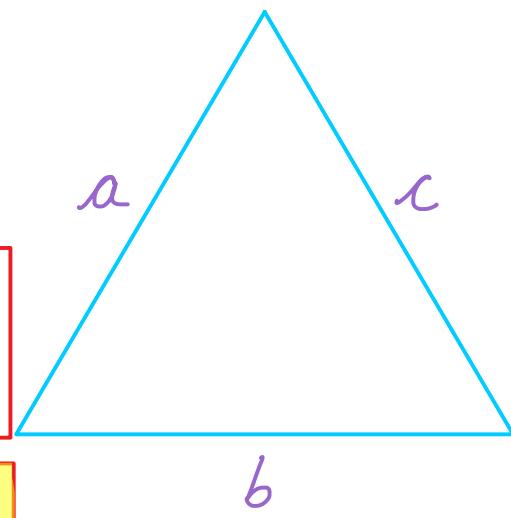
To prove :- $AM = MB$

9th Class



$$s = \frac{a + b + c}{2}$$

$$\text{Area of Triangle} = \sqrt{s(s-a)(s-b)(s-c)}$$



Heron's Formula