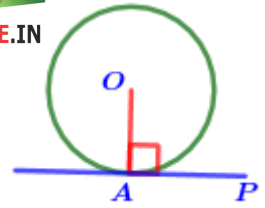




Main concepts

The tangent at a point on a circle is perpendicular to the radius through that point



From a point outside a circle, two tangents can be drawn.

The tangents to a circle from a point are of same length.

In the figure O is the centre of the circle. Tangents through the points A and B intersect at P, then

a) $PA = PB$

b) OAPB is a cyclic quadrilateral.

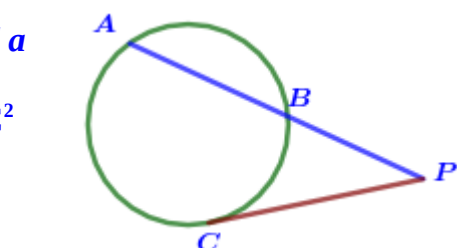
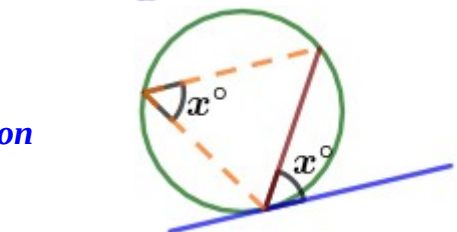
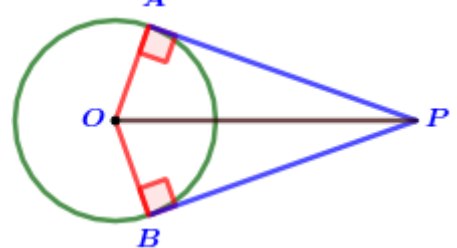
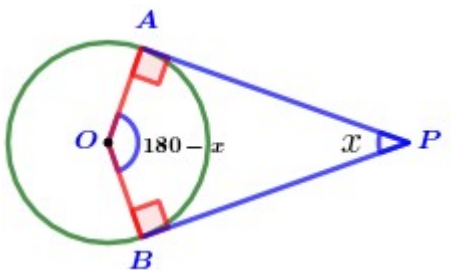
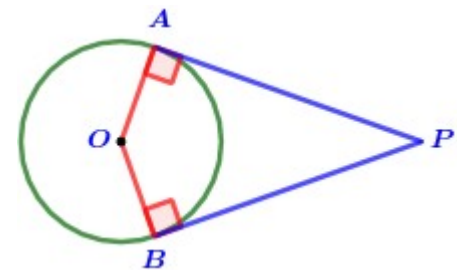
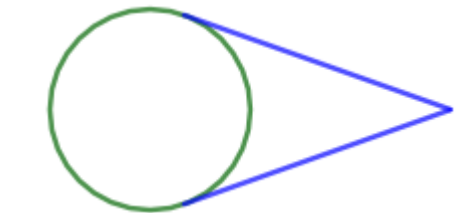
c) $\angle AOB + \angle APB = 180^\circ$

d) OP is the bisector of $\angle AOB$.

e) OP is the bisector of $\angle APB$.

In a circle, the angle which a chord makes with the tangent at one end on any side is equal to the angle which it makes on the part of the circle on the other side.

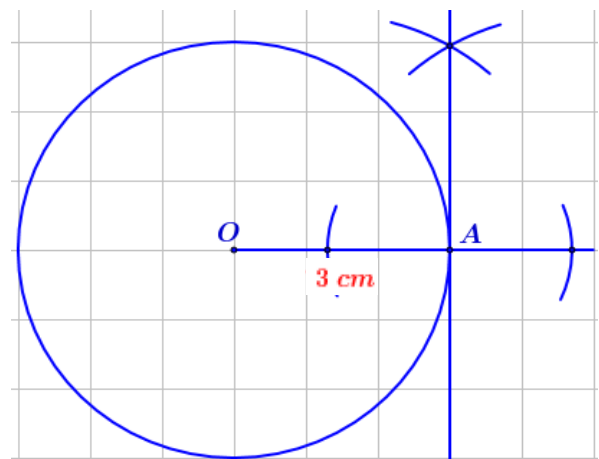
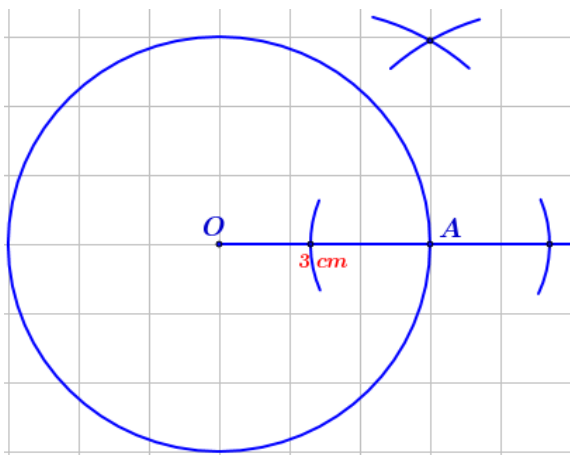
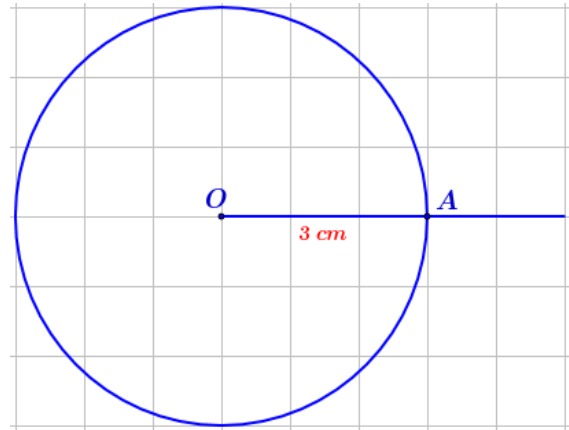
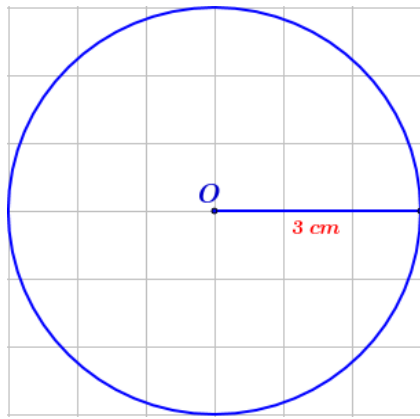
In the figure, P is a point on the chord AB is extended and a tangent from P touches the circle at C, then $PA \times PB = PC^2$



CONSTRUCTIONS - TANGENTS

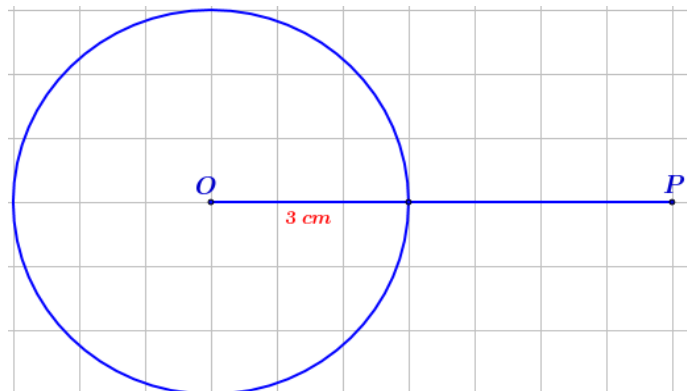
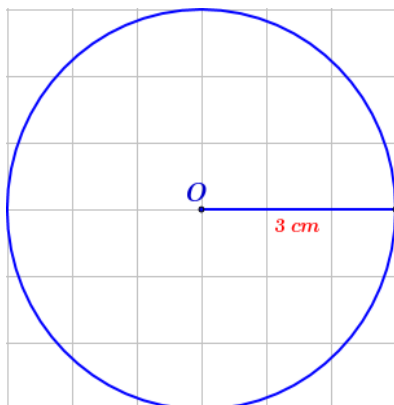
1. Tangent through a point on a circle

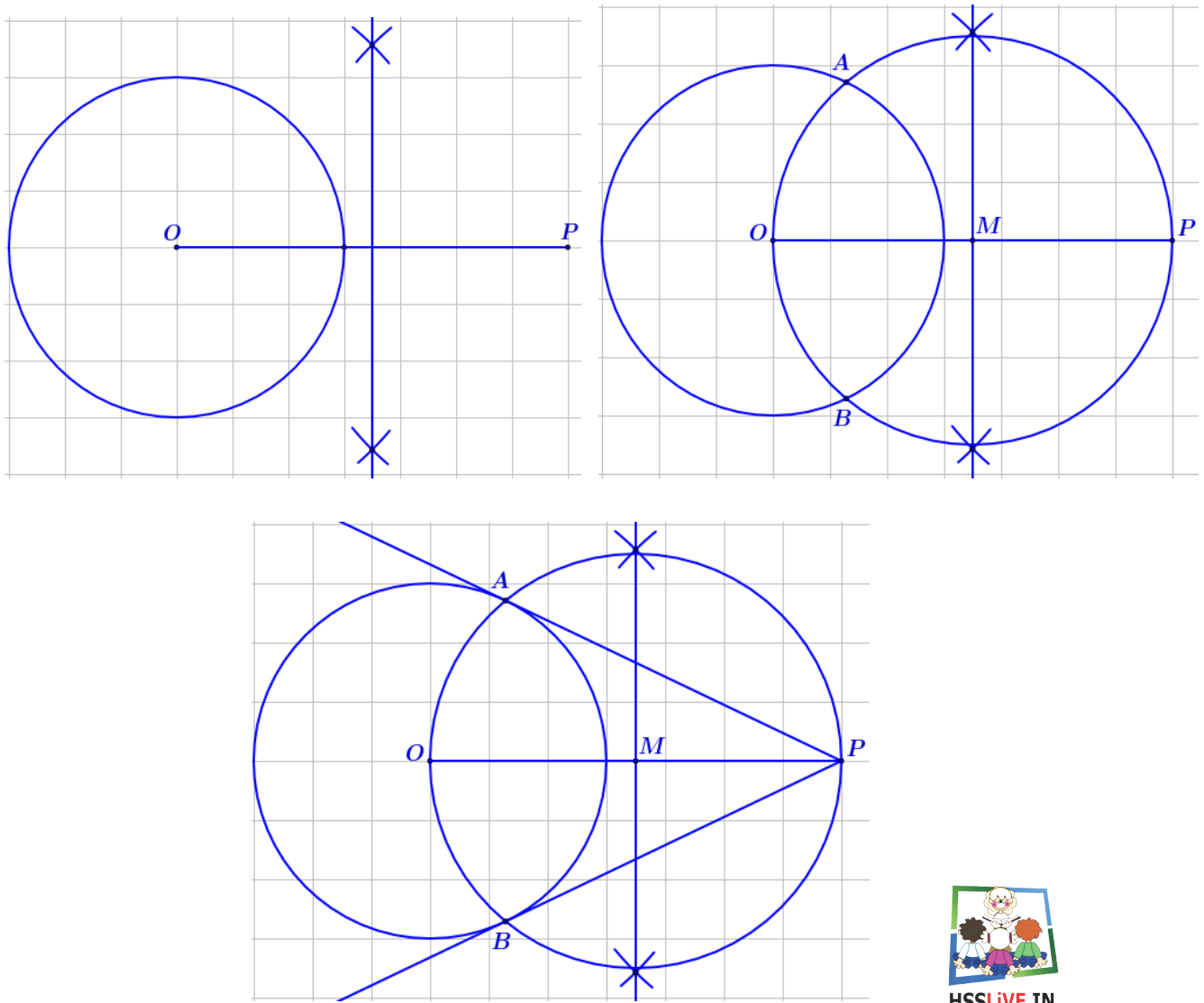
- Draw a circle of radius 3 cm and mark a point on it . Draw a tangent through that point ?



2. Tangents from a point outside the circle

- Draw a circle of radius 3 cm and mark a point 7 cm away from its centre. Draw the tangents to the circle from this point ?





5. Triangle with all its sides touching a circle.

- Draw a circle of radius 2 cm . Draw a triangle of angles 40° , 60° , 80° with all its sides touching the circle.

