



Instructional video 1

Now let's see how to construct a locus of equi-angular points, in this case, the locus of all points X such that angle AXB is 75° and the measure of line segment AB is 5 cm. From the point of view of geometric constructions, we are looking for the locus of all points X at the circumference of a circle such that the angles with vertices X subtended by line segment AB are 75° .

At first, we need to draw a line segment AB which is 5 cm. Secondly, we construct the angle which is 75° such that the line segment AB is one of the arms of this angle and the vertex is either at point A or B. In our case it's point B. The other arm of the angle will be line t.

Thirdly, we need to construct a perpendicular to line t at point B and then we also construct a perpendicular bisector of AB.

The point of intersection of the perpendicular bisector and the perpendicular is the centre of the required circle.

Finally, we draw a circle with centre S and radius SA or SB.

The required locus of equi-angular points is the arc of the circle AB lying in half-plane ABS.

In this construction we have used the properties of inscribed, central and tangent-chord angles.

Instructional video 2

How to construct a locus of equi-angular points if an angle AXB is an obtuse angle.

At first, we need to draw the given line segment which is 5 cm.

Secondly, we construct the angle which is 110° such that the line segment AB is one of the arms of this angle and the vertex is either at point A or B, in this case it's point B. The other arm of the angle will be line t.

Thirdly, we construct a perpendicular to line t at point B and then, we also construct perpendicular bisector of AB.

The point of intersection of the perpendicular bisector and the perpendicular is the centre of the required circle.

Finally, we draw a circle with radius SA or SB.

In this case, the required locus of equi-angular points is the arc of the circle AB lying in a half-plane opposite to half-plane ABS.