Locus

By the end of the lesson you will be able to:

- Draw the perpendicular bisector of a segment and bisectors of angles using ruler and compasses.
- Understand, identify and draw locus of points.

Mark all the points that are at the same distance from A and B.

Mediatriz 2.ggb

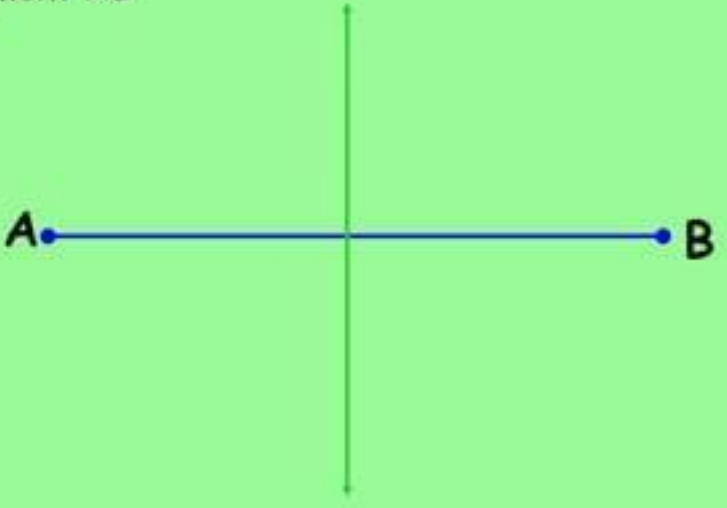
Conclusion:
The set of all the points equidistant from the end points of a line segment is the **perpendicular bisector** of the segment.

How to draw the perpendicular bisector of a segment

The locus of a point is the path traced out by the point as it moves .

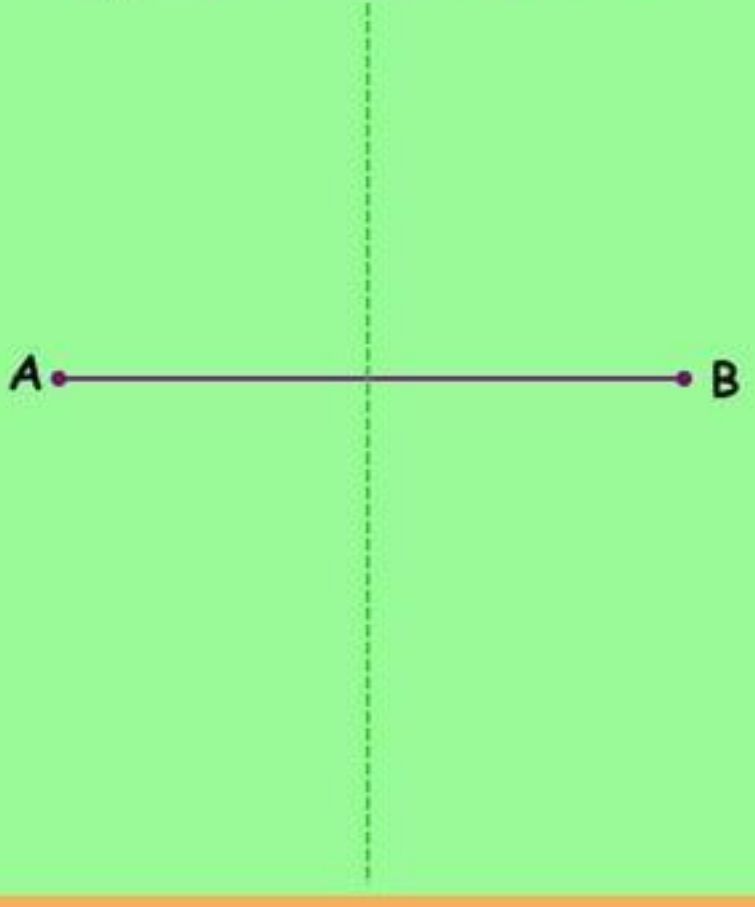
The locus of a point is the path traced out by the point as it moves .

The locus of points which are equidistant from two given points A and B is the perpendicular bisector of the segment AB



A **locus** is a set of points which fit a condition.

Draw the locus of points which are closer to A than to B.



Draw the locus of points which are at 3 cm from P

=

Draw all the points which are at 3 cm from P

Locus.ggb

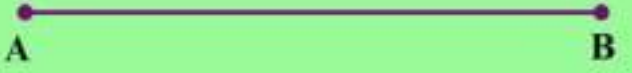
The locus of the points whose distance to a fixed point P is constant is the circumference of centre P.

Draw the locus of points that are 3 cm from line AB.

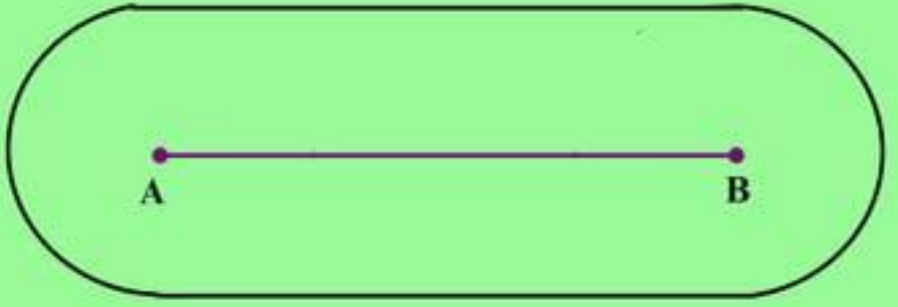
Locus of points that are 3 cm from line AB.

http://math.nie.edu.sg/bwjyeo/it/MathsOnline_EM/geosketch/jsps/IT4EMLoci1LineAns.htm

Draw the locus of points which are 3 cm from AB

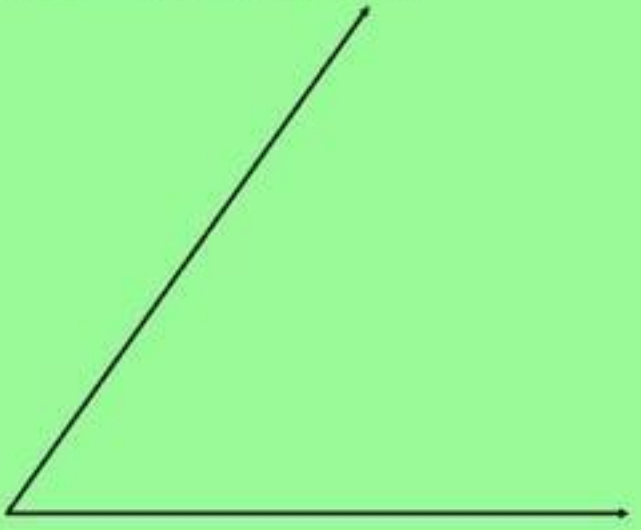


Draw the locus of points which are 3 cm from AB

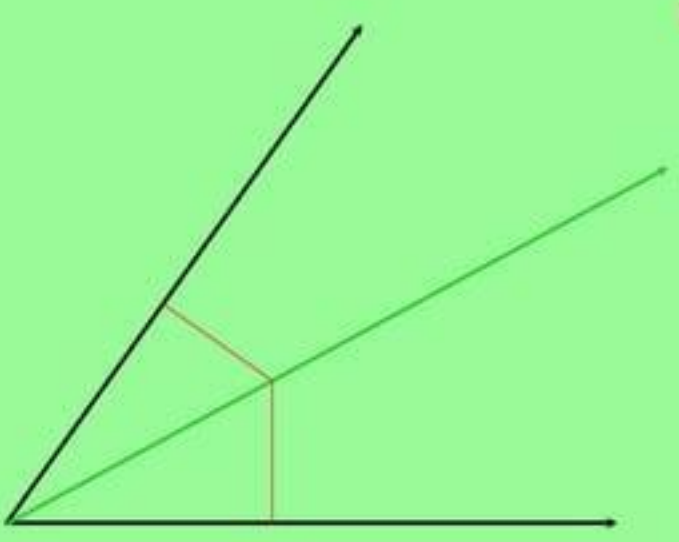


Construct the bisector of the angle:

http://www.mathopenref.com/constbisectangle.html

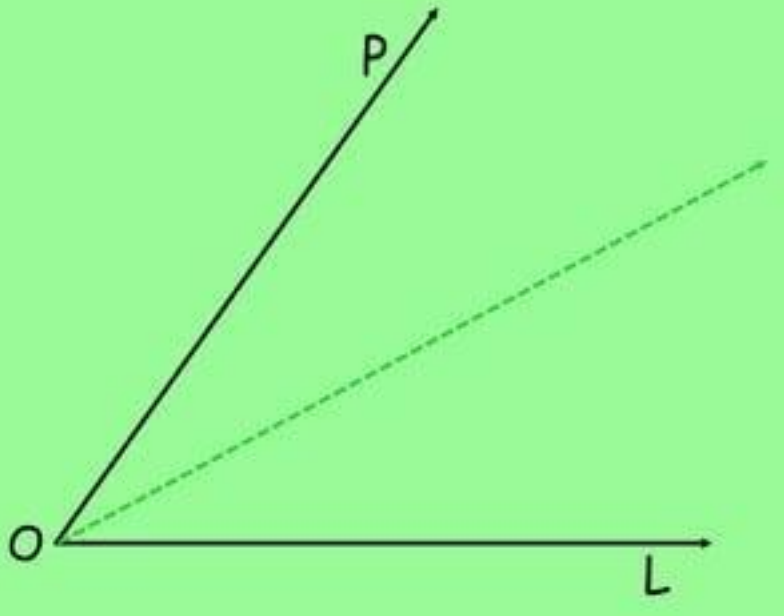


The points on the bisector of the angle are at the same distance from both arms of the angle.

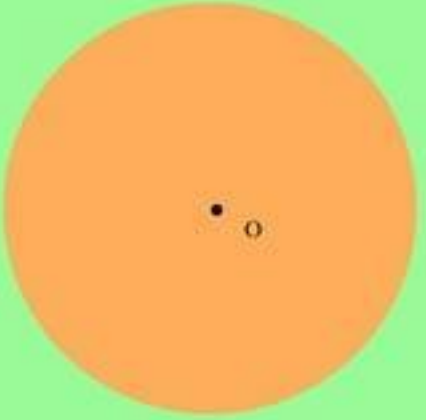


The locus of all the points which are <u>equidistant from the sides of an angle</u> is the bisector of the angle

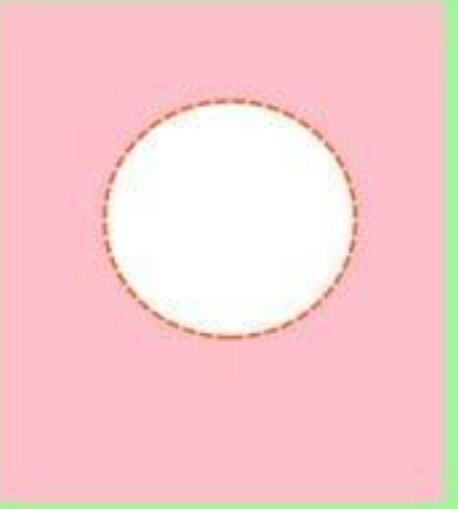
Draw the locus of points which are closer to side OP than to side OL.



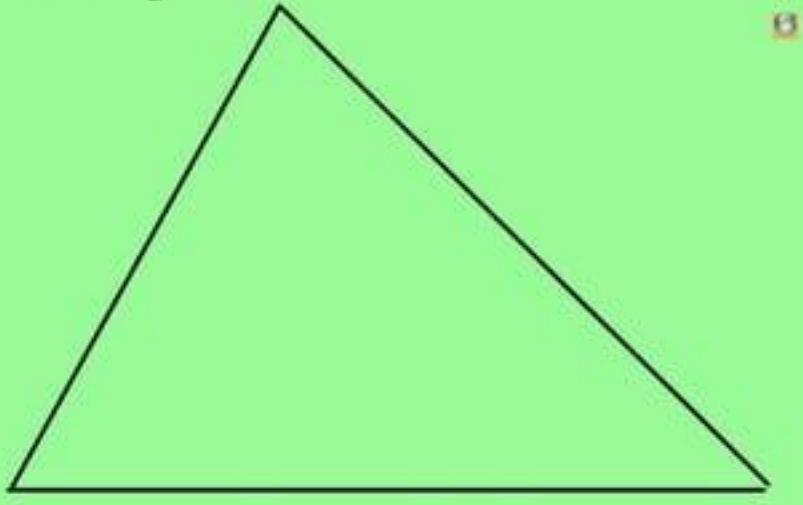
Draw the locus of the points which are 3 cm or less from a point O.



Draw the locus of the points which are more than 3 cm from O.



Draw the perpendicular bisectors of all the sides in the triangle

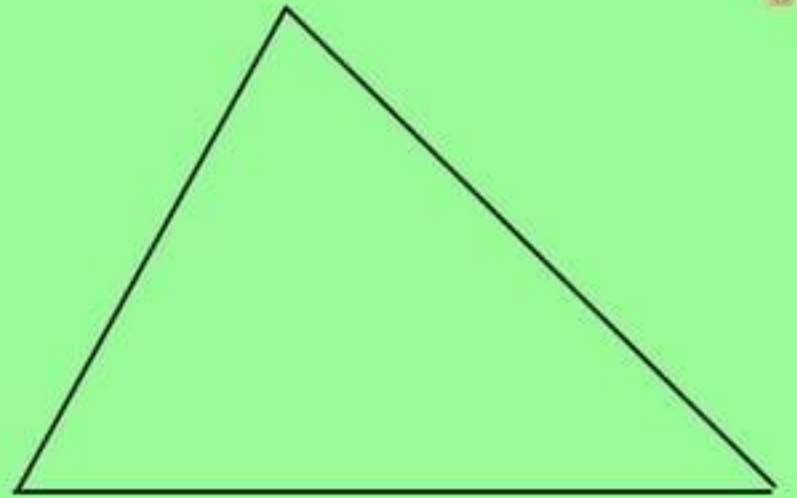


The perpendicular bisectors of the sides of a triangle meet at a point called the **circumcentre**.

The circumcentre is at the same distance from each vertex.

The circumcentre is the centre of a circunference that passes through the three vertices.

Draw all the bisectors of the angles of the triangle



The bisectors of the angles of a triangle meet at a point called the **incentre**.

The incentre is at the same distance from each side of the triangle.

The incentre is the centre of a circunference that touches the three sides of the triangle.

Attachments

Locus.ppt

Worksheet LOCI.doc

Circumscribed.ppt

Perpendicular bisector.ggb

Mediatriz 2.ggb

Circumference Locus.ggb