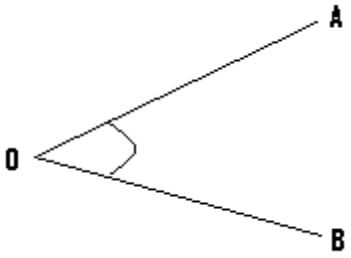
CHAPTER NINE
CONSTRUCTION

Angle:

An angle is formed when two straight lines meet at a point.

Example:



- In the diagram given, the lines OA and OB meet at the point O.

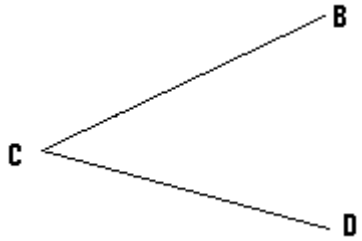
- The angle formed is angle AOB or angle BOA.

- Angle AOB can be written as < AOB, while angle BOA can be written as < BOA

BISECTION OF ANGLES:

- To bisect a given angle means to divide it into two equal parts.

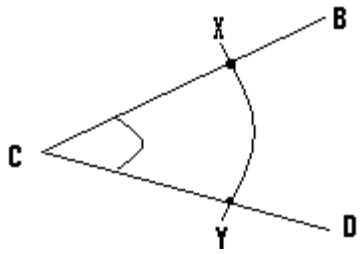
Example 1



In the given figure, bisect angle BCD.

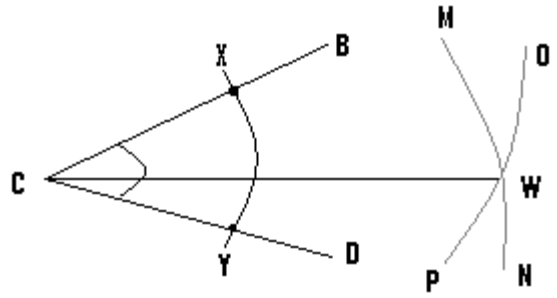
STEPS:

(I)



- Open your compass to a suitable length, and with its pin positioned at point c, draw an arc to cut line CB at point X and line CD at point Y.

(II)



- Open your compass to a greater length and with its pin now positioned at point X, draw arc OP.

- With the same length and the pin now positioned at the Y, draw arc MN and let the meeting point or the point of intersection of these two arcs be W.

- Finally draw a line to pass through the point C and W.

- By so doing we have bisected < BCD.

The Bisector:

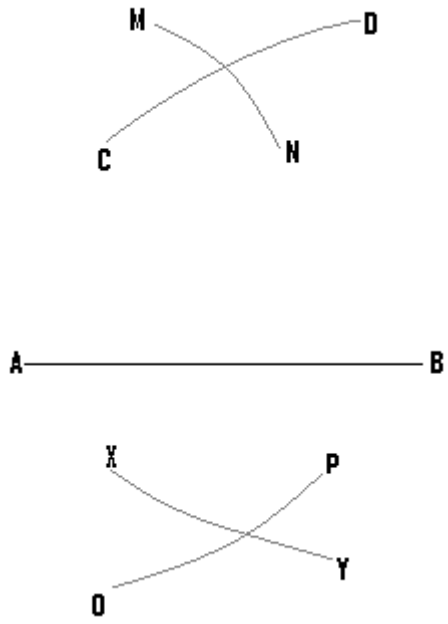
- This may also be referred to as the perpendicular bisector.

- The perpendicular bisector when drawn to pass through a given line, divides the line into two equal parts.

Examples:

Construct the bisector of the line AB.

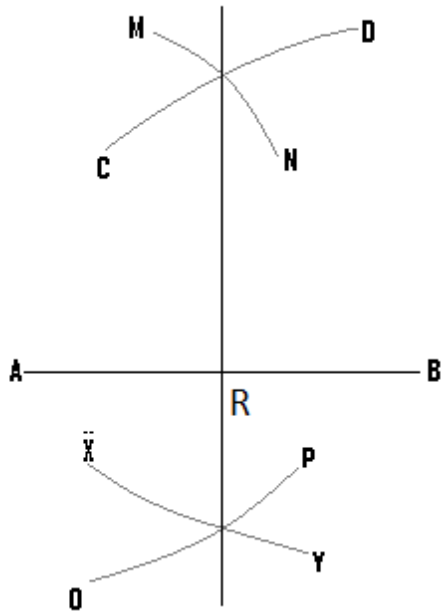
Steps:



- Open your compass to a suitable length, and with its pin positioned at point B, draw arcs CD and XY.

- Using the same length and with the pin now positioned at A, draw arcs MN and OP.

- Finally draw a line to pass through the meeting points, or the points of intersection of the various arcs.

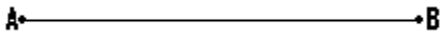


N/B : AR = RB

Location of a point from two different fixed points:

- Two fixed points may be given and one asked to determine the position of a point, which may be at different distances away from these points.

Examples:



Given the points A and B, determine the position or the location of the point Y, which is 5cm away from A and 7cm away from B.

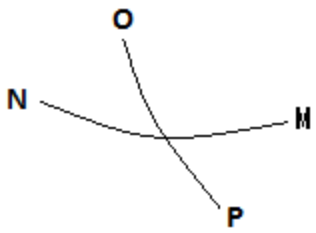
Steps:

(I)

- Open your compass to a length of 5cm, and with the pin positioned at A draw arc MN.

- The compass is then opened to a length of 7cm, and with its pin positioned at B draw arc OP.

- The meeting point of these arcs is the location of the point Y.

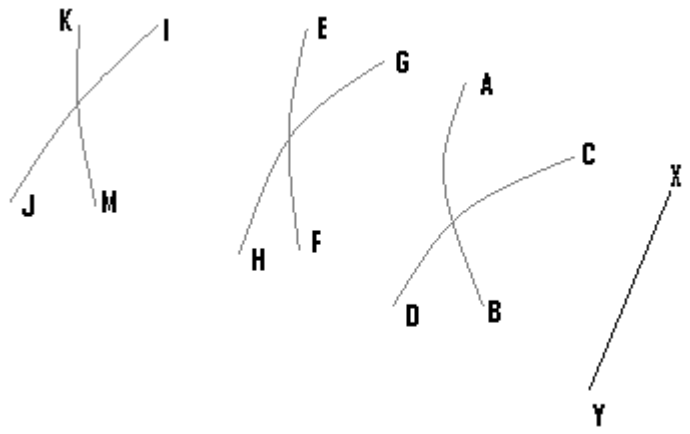


LOCUS OF POINTS EQUIDISTANT FROM TWO POINTS:

- Equidistant means equal distance.

- To construct the locus of points which are equidistant from two points, we determine the various points which are of equal distance away, from these two points.

Example:



Construct the locus of all the points, which are equidistant from X and Y.

STEPS:

(1)

-Open your compass to an appropriate length, and with pin positioned at the point X, draw arc AB.

- Using the same length and with the pin now positioned at the point Y draw arc CD.

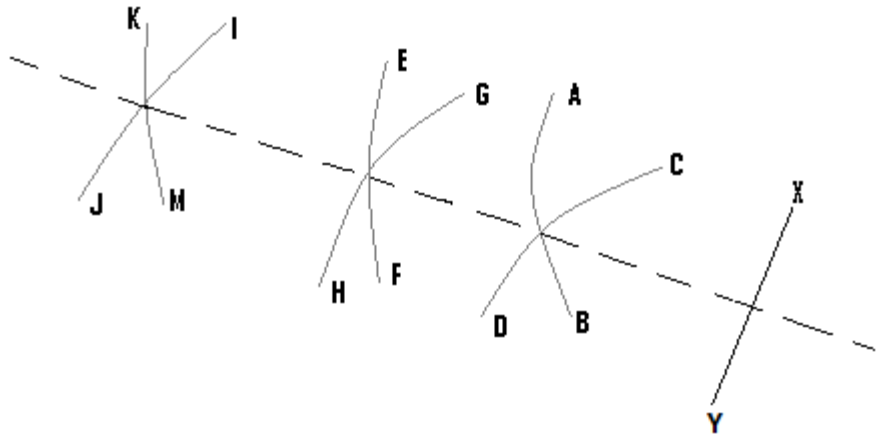
- Open your compass to a greater length, and with the pin positioned at point X, draw arc EF.

- Using the same length and with the pin now positioned at the point Y, draw arc GH.

- Using a different length and the same procedure, we construct arc I J and KM.

- Finally draw a line to pass through all the points of intersection, of all the arcs.

- Locus is normally represented by a broken line.



-The broken line is the locus of the points, which are equidistant from the point X and Y.

- Also any point on this line will be equidistant from the points Xand Y.