

PRACTICAL GEOMETRY

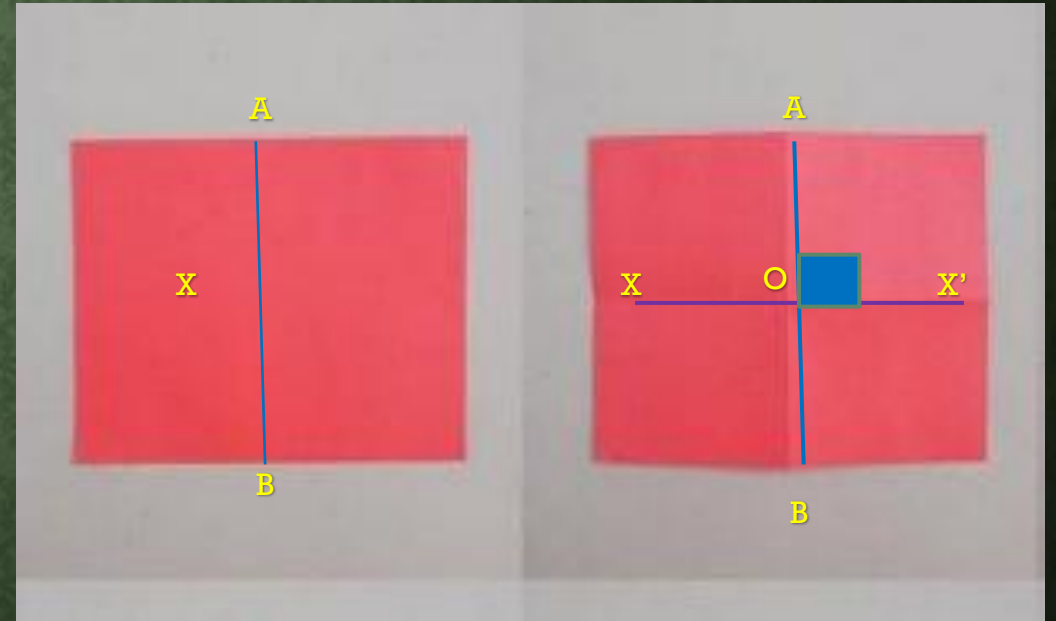
CLASS-6

MODULE-4/8

THE PERPENDICULAR BISECTOR OF A LINE SEGMENT

PAPER FOLDING METHOD-1

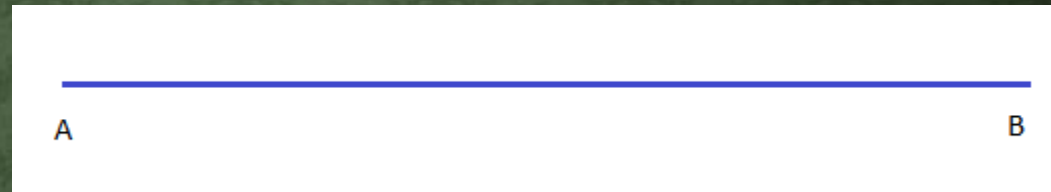
- Fold a sheet of paper
- Let AB be the fold
- Mark a point X (anywhere on paper)
- Find the image X'X with AB as the mirror line.
- Let AB and X'X intersect at O
- We observe that $OX = OX'$
- This means that AB divides XX' into parts of equal length
- Also note that $\angle AOX = \angle BOX = 90^\circ$



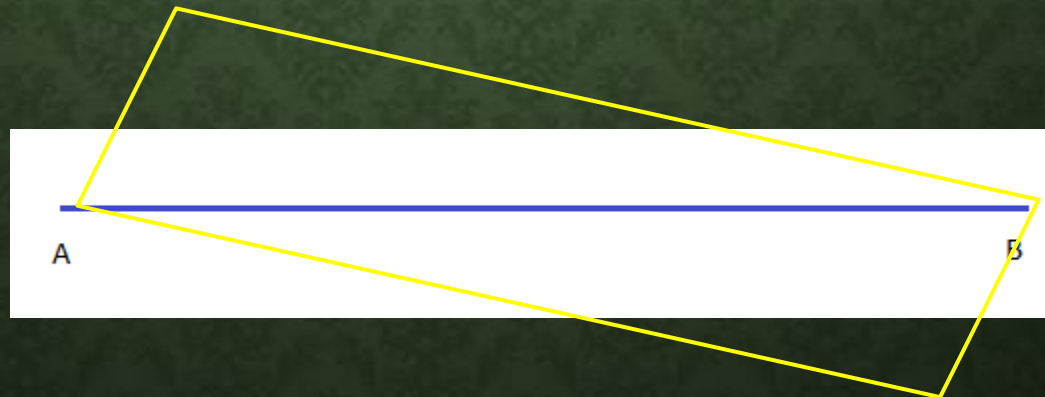
THE PERPENDICULAR BISECTOR OF A LINE SEGMENT

PAPER FOLDING METHOD-2

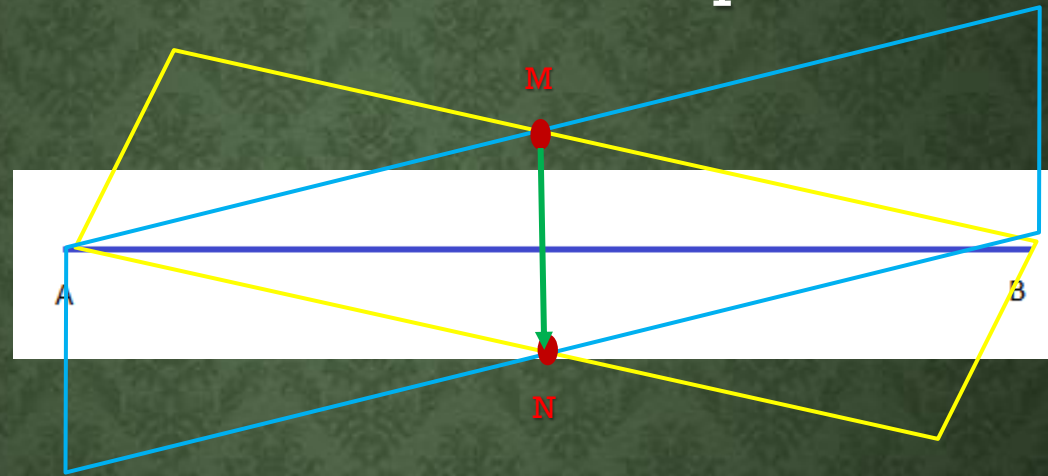
- Draw a line segment AB



- Place a strip of a coloured strip diagonally across AB with the edges of the strip on the end points A and B.



- Repeat the process by placing another strip over A and B just diagonally across the previous one. The two strips cross at M and N.

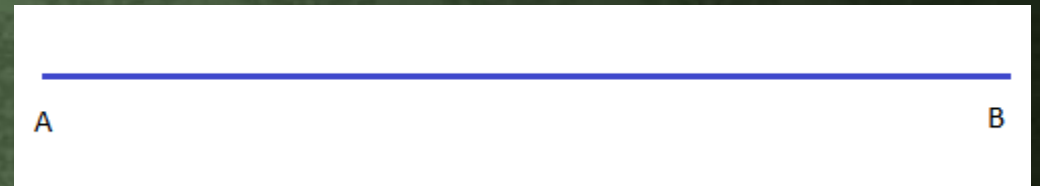


- **OBSERVATION:**
- We observe that MN is a bisector of AB.
- $OA = OB$

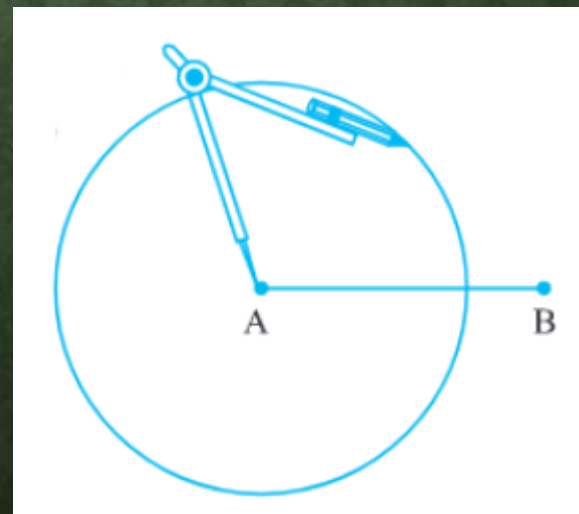
THE PERPENDICULAR BISECTOR OF A LINE SEGMENT

USING RULER AND COMPASSES

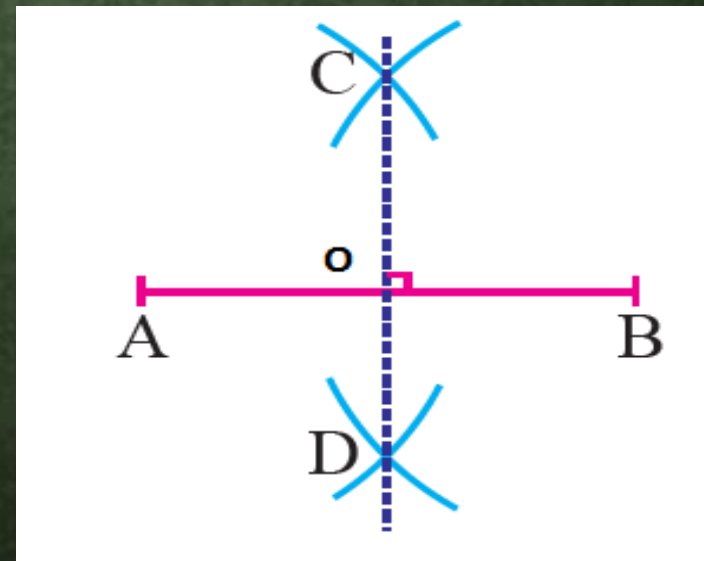
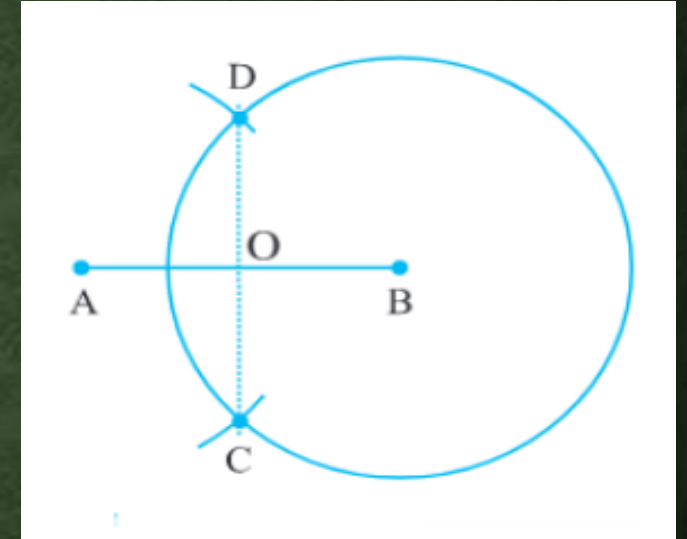
- Draw a line segment AB of any length



- With A as centre, using compasses, draw a circle. The radius of your circle should be more than half of the length of AB.

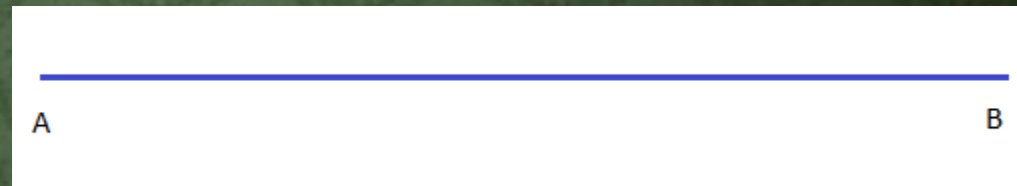


- With the same radius and with B as centre, draw another circle using compasses. Let it cut the previous circle at C and D.
- Join CD. It cuts AB at O.
- Observation:
- O is the mid-point of AB
- $\angle COA$ and $\angle COB$ are right angles

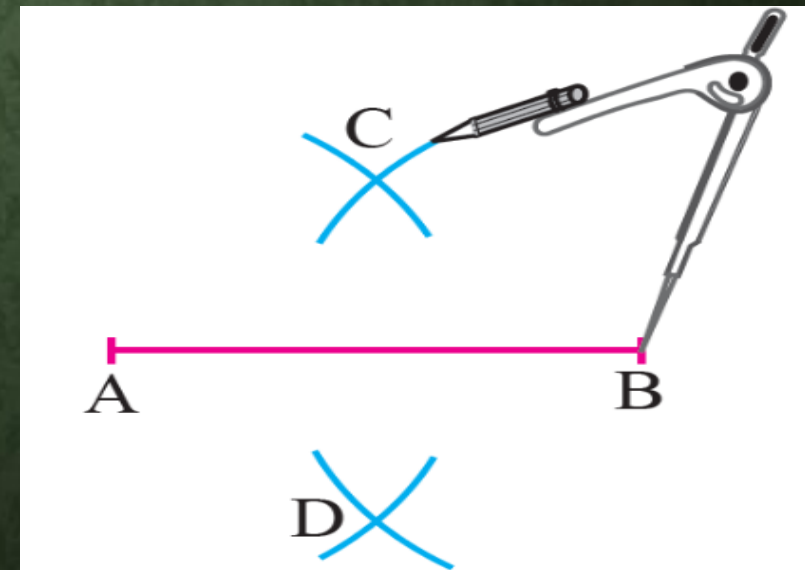


DIVIDING A LINE SEGMENT INTO EQUAL PARTS

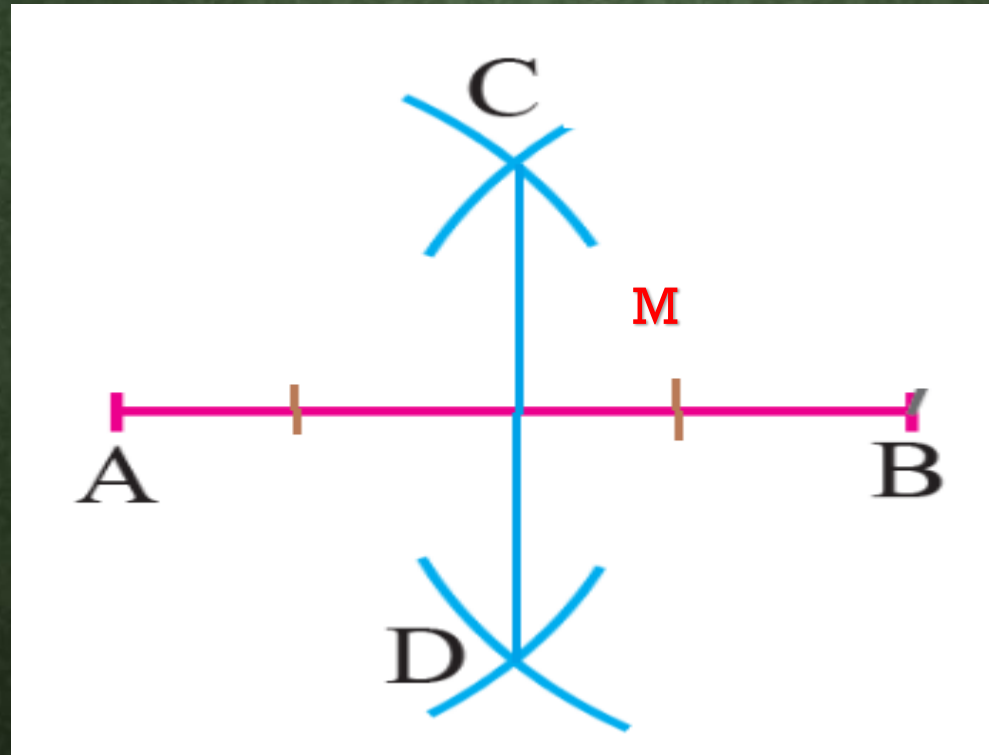
- Draw a line segment AB.



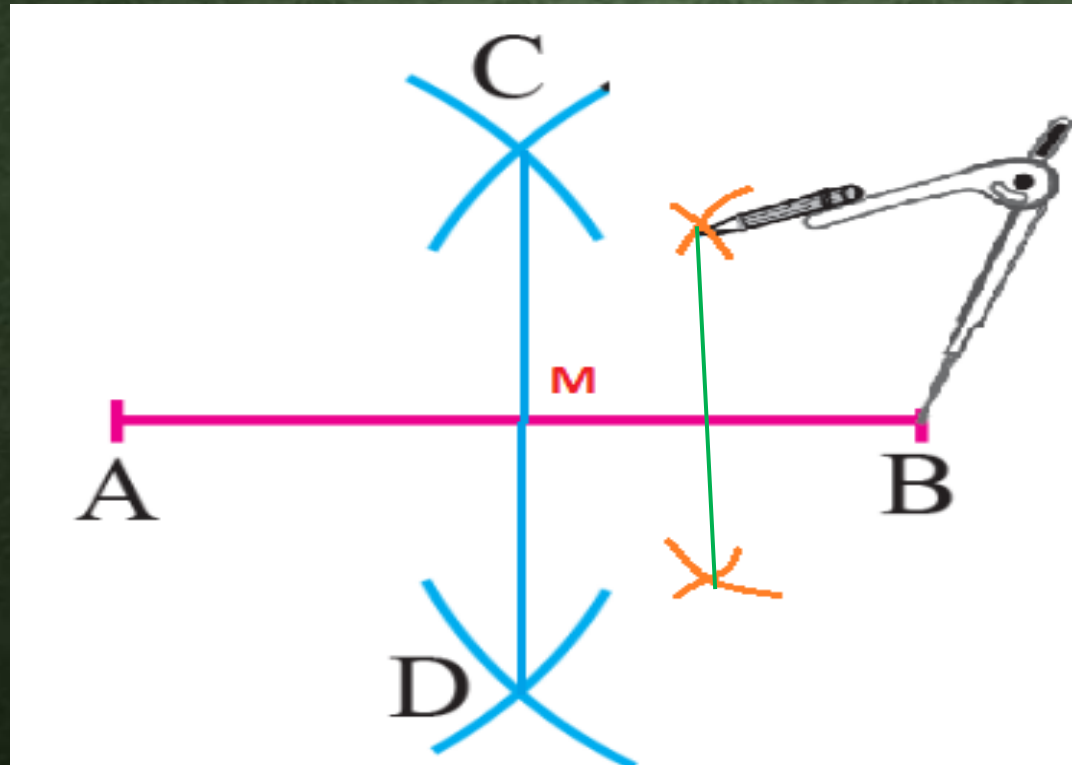
- Taking A and B as centres and radius more than half of AB draw arcs which intersect each other at C and D.



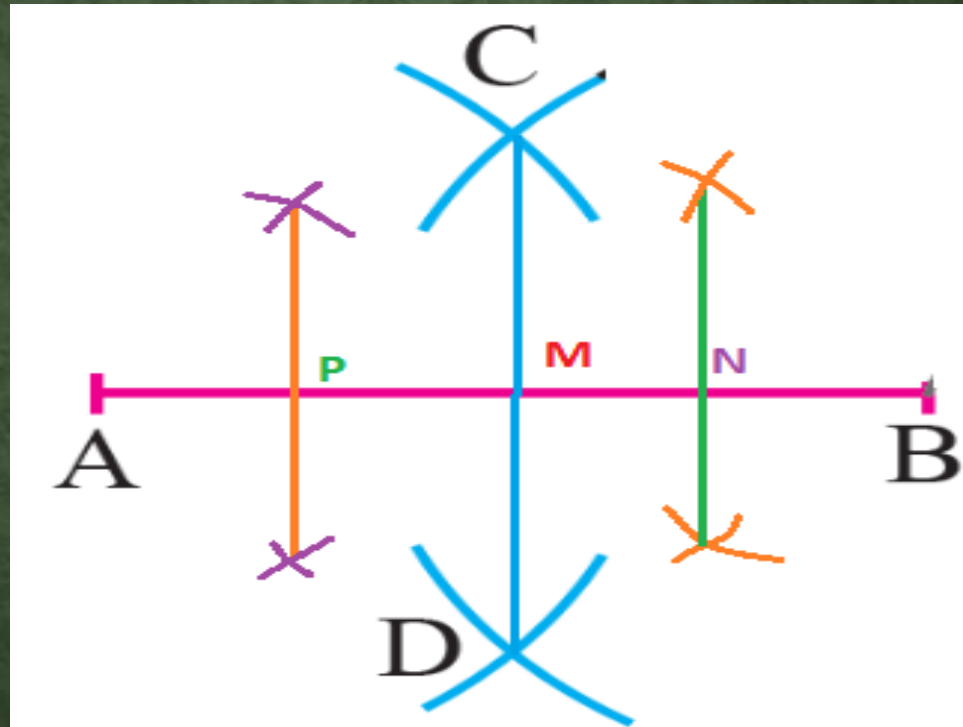
- Join CD. CD bisects AB.
- Let M be the intersecting point and $AM = MB$.



- Now draw perpendicular bisector of MB, which cuts it at N.
- Here $MN = NB$.



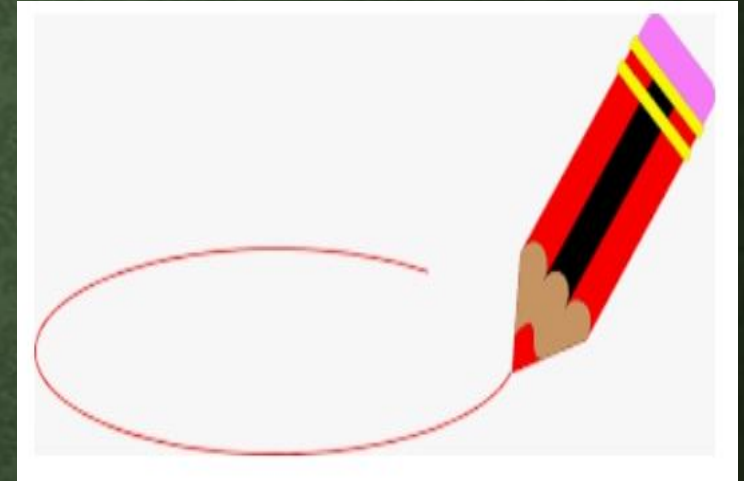
- Again draw perpendicular bisector of AM , which cuts it at P .
- Here $AP = MP$.



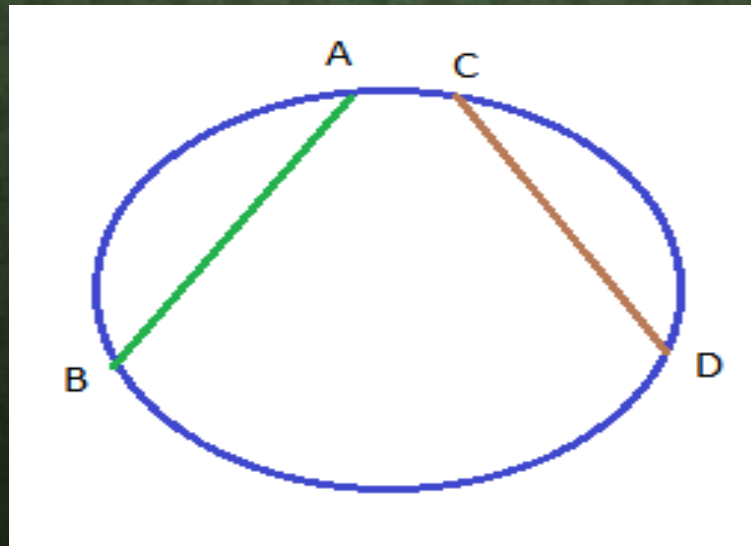
- This way we can divide a line segment into equal parts.

HOW TO FIND THE CENTRE OF A CIRCLE

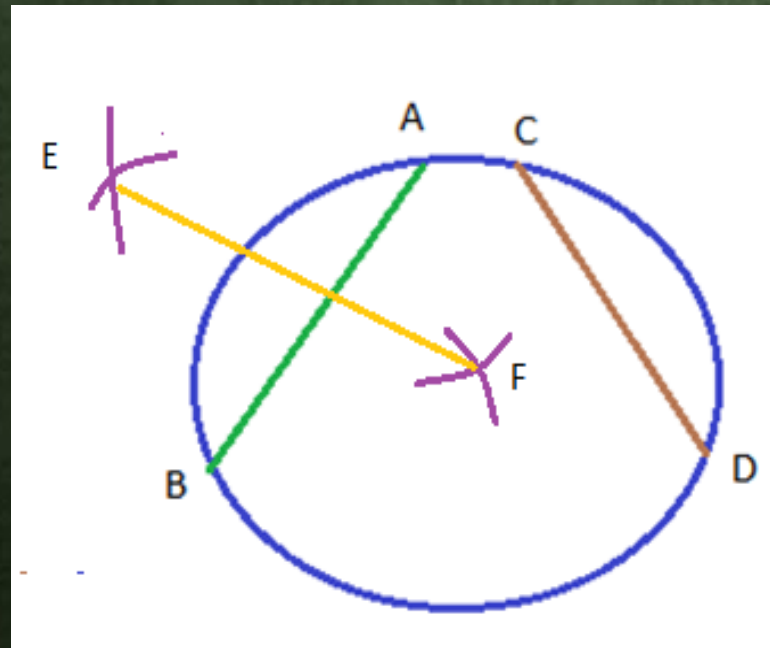
- Draw a circle with a bangle or any bottle cap.



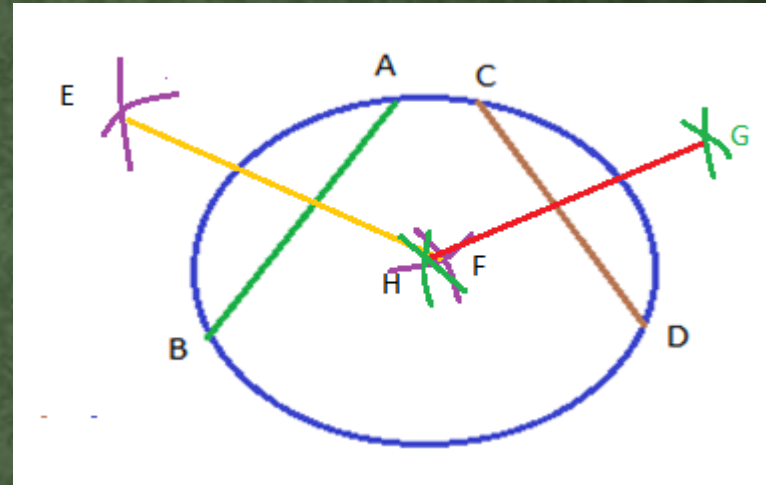
- Draw any two chords AB and CD in this circle.



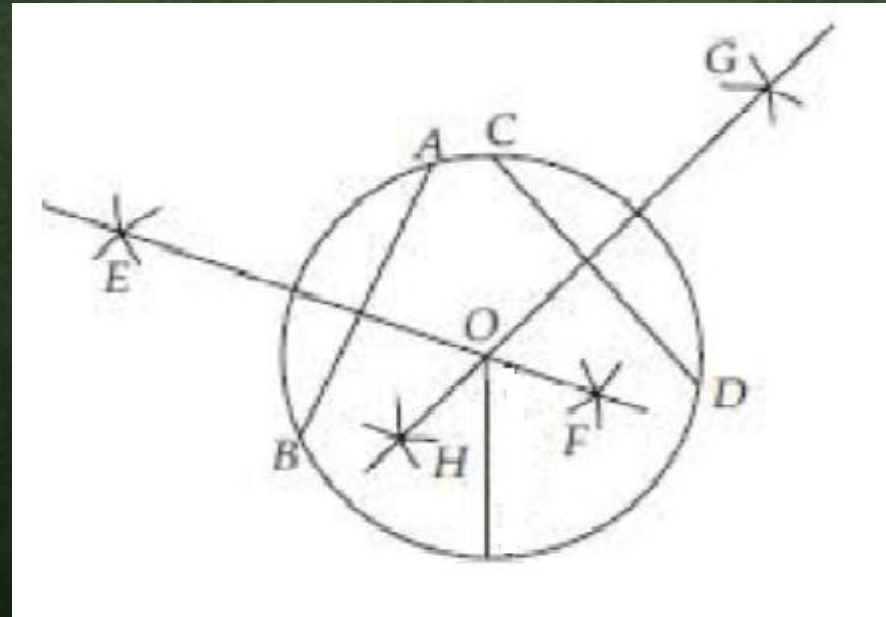
- Taking A and B as centres and radius more than half the length of AB, draw two arcs which intersect each other at E and F
- Join EF
- EF is the perpendicular bisector of chord AB



- Similarly draw GH which is perpendicular bisector of CD



- These two perpendicular bisectors meet at centre "O"



THANK YOU

V V DURGA BHAVANI

TGT (MATH/PHY)

AECS-2 , TARAPUR