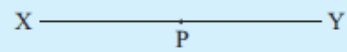


# Construction of a $90^\circ$ angle

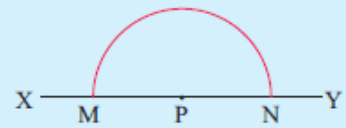
## Example 4

Self Tutor

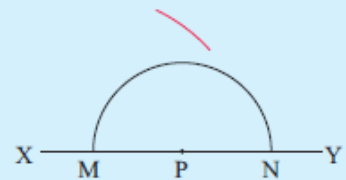
Construct an angle of  $90^\circ$  at P on the line segment [XY].



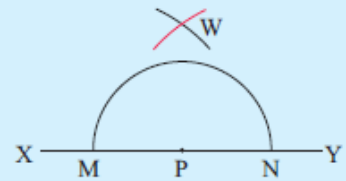
*Step 1:* On a line segment [XY], draw a semi-circle with centre P and convenient radius which cuts [XY] at M and N.



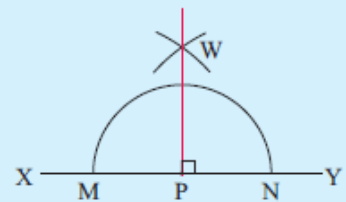
*Step 2:* With centre M and convenient radius larger than MP, draw an arc above P.



*Step 3:* With centre N and the same radius draw an arc to cut the first one at W.



*Step 4:* Draw the line from P through W.  $\widehat{WPY}$  and  $\widehat{WPX}$  are both  $90^\circ$ .



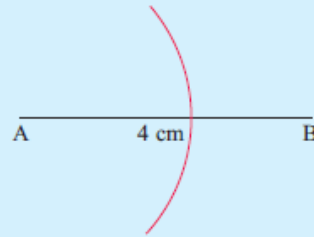
# Construction of a perpendicular Bisector

## Example 5

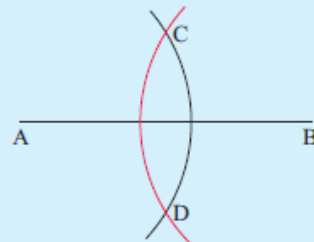
Self Tutor

[AB] has length 4 cm. Locate the midpoint of [AB] by construction using a perpendicular bisector.

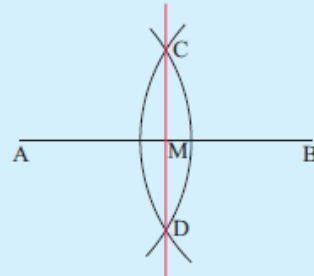
*Step 1:* With centre A and radius more than 2 cm, draw an arc of a circle to cut [AB] as shown.



*Step 2:* Repeat *Step 1*, but with centre B. Make sure that the first arc is crossed twice at C and D.



*Step 3:* With pencil and ruler, join C and D. The point where (CD) and [AB] meet is the midpoint M. (CD) and [AB] are perpendicular.



# Construction of an Angle Bisector

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## Investigation 2

### Angle Bisecting with Compass

#### You will need

- a compass
- a straightedge

In this investigation, you will find a method for bisecting an angle using a compass and straightedge. Each person in your group should investigate a different angle.

Step 1 Draw an angle.

Step 2 Find a method for constructing the bisector of the angle. Experiment!

Hint: Start by drawing an arc centered at the vertex.

Step 3 Once you think you have constructed the angle bisector, fold your paper to see if the ray you constructed is actually the bisector. Share your method with other students in your group. Agree on a best method.

Step 4 Write a summary of what you did in this investigation.

