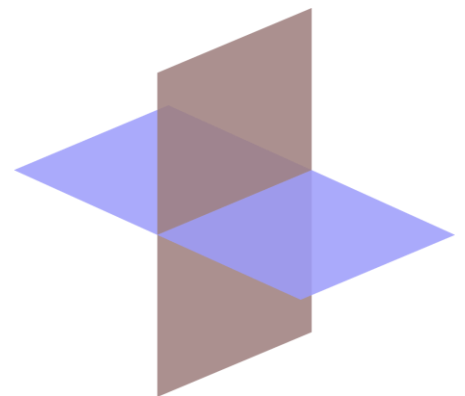


<b>CLASS</b>	<b>VI</b>
<b>SUBJECT</b>	<b>MATHS</b>
<b>TOPIC</b>	<b>Understanding Elementary Shapes</b>
<b>SUBTOPIC</b>	<b>Perpendicular Lines</b>
<b>NO. OF SESSIONS</b>	<b>1</b>

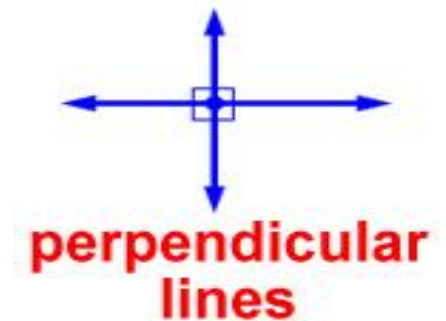
**Introduction:**

**PERPENDICULAR LINES**



When two lines intersect and the angle between them is a right angle, then the lines are said to be perpendicular.

If a line AB is perpendicular to CD, we write  $AB \perp CD$

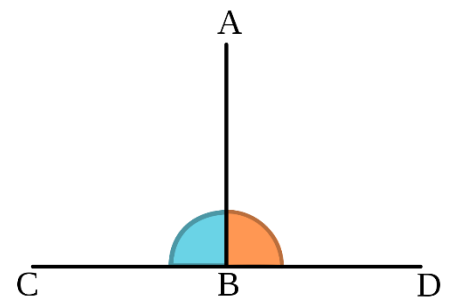


**Perpendicular Bisector:**

Line segment AB is perpendicular to Line segment CD

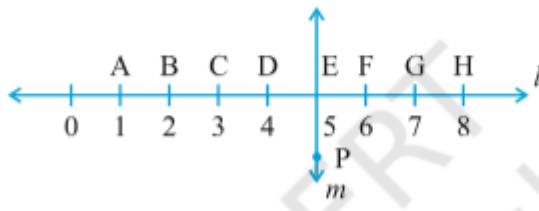
$BC = BD$

B is a mid-point of line segment CD



**Solved Question:**

1. Study the diagram. The line  $l$  is perpendicular to line  $m$   
 (a) Is  $CE = EG$ ?



Solution:  $CE = CD + DE = 2$  units

$EG = EF + FG = 2$  units

Hence  $CE = EG$

- (b) Does  $PE$  bisect  $CG$ ?

Solution: Since  $CE = EG$

And  $PE$  lies in between  $CG$  making  $90^\circ$

Hence  $PE$  bisects  $CG$

- (c) Identify any two line segments for which  $PE$  is the perpendicular bisector.



Since  $ED = EF$  &  $PE$  is perpendicular  $DF$



$CE = EG$  &  $PE$  is perpendicular  $CG$

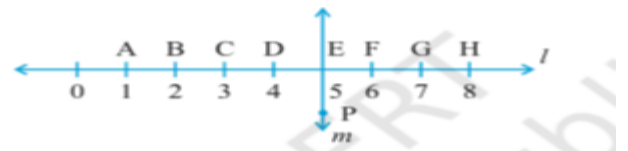
Two required line segments are  $ED$  and  $CG$

- (d) Are these true?

(i)  $AC > FG$

(ii)  $CD = GH$

(iii)  $BC < EH$ .



(i) Since  $AC = AB + BC = 2$  units and  $FG = 1$  unit. Hence  $AC > FG$

(ii)  $CD = GH$  (1 unit)

(iii)  $BC = 1$  unit and  $EH = 3$  units. Hence  $BC < EH$

**Video link:** <https://youtu.be/P3AOoLbA3us>

**Homework:** NCERT Exercise 5.5 Question No:1,2,3