EXERCISE 5.5 PAGE NO: 100

1. Which of the following are models for perpendicular lines:

(a) The adjacent edges of a table top.

(b) The lines of a railway track.

(c) The line segments forming the letter 'L'.

(d) The letter V.

Solutions:

(a) The adjacent edges of a table top are perpendicular to each other.

(b) The lines of a railway track are parallel to each other.

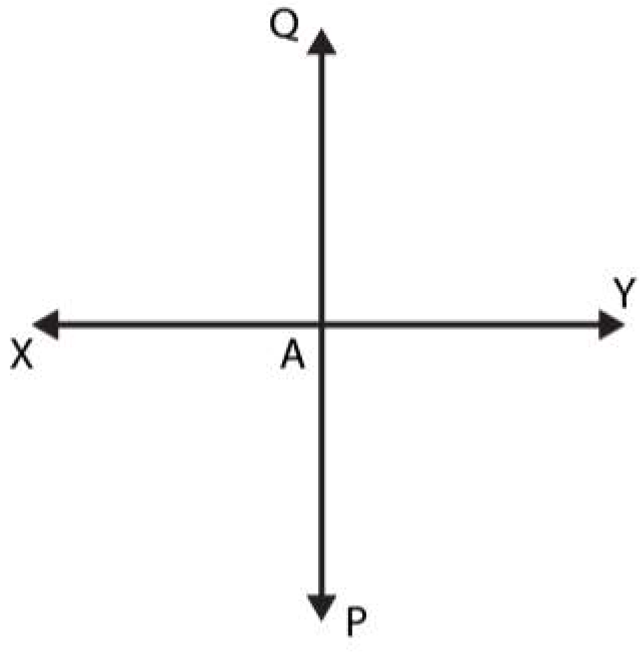
(c) The line segments forming the letter 'L' are perpendicular to each other

(d) The sides of letter V are inclined forming an acute angle.

Therefore (a) and (c) are models for perpendicular lines.

2. Let $\overline{PQ}$ be the perpendicular to the line segment $\overline{XY}$. Let $\overline{PQ}$ and $\overline{XY}$ intersect in the point A. What is the measure of ∠PAY?

Solutions:



From the figure it is clear that the measure of ∠PAY is 90^0

3. There are two set squares in your box. What are the measures of the angles that are formed at their corners? Do they have any angle measure that is common?

Solutions:

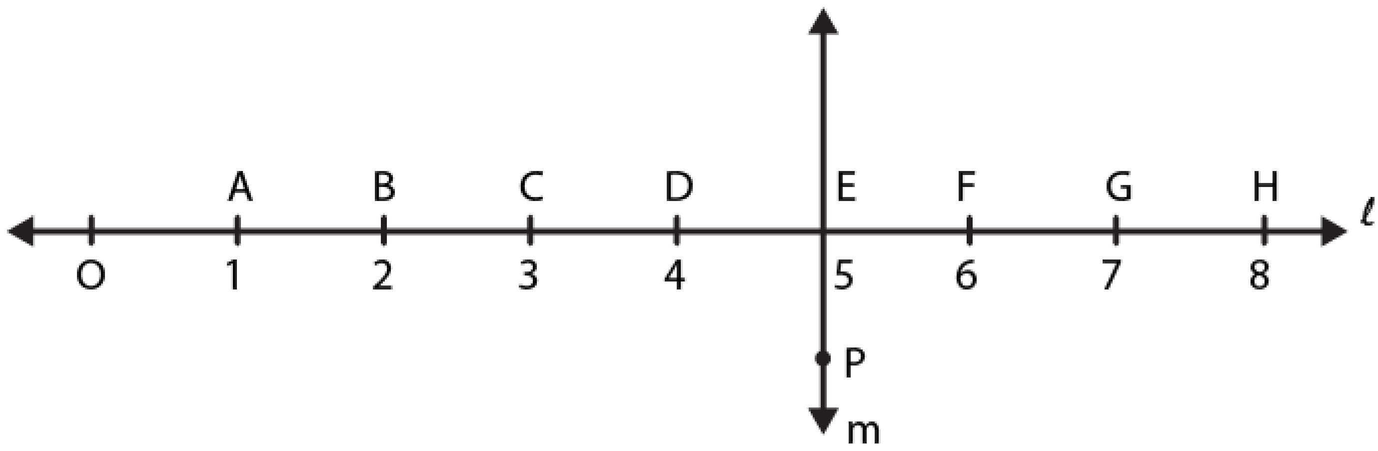
The measure of angles in one set square are 30^0, 60^0 and 90^0

The other set square has a measure of angles 45^0, 45^0 and 90^0

Yes, the angle of measure 90^0 is common in between them

4. Study the diagram. The line l is perpendicular to line m

(a) Is CE = EG?



(b) Does PE bisect CG?

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

(d) Are these true?

(i) AC > FG

(ii) CD = GH

(iii) BC < EH.

Solutions:

(a) Yes, since, CE = 2 units and EG = 2 units respectively

(b) Yes. Since, CE = EG as both are of 2 units. Hence PE bisect CG

(c) $\overline{BH}$ and $\overline{DF}$ are the line segments for which PE is the perpendicular bisector

(d) (i) True. Since AC = 2 units and FG = 1 unit

∴ AC > FG

(ii) True because both are of 1 unit

(iii) True. Since, BC = 1 unit and EH = 3 units

∴ BC < EH