



ST. LAWRENCE HIGH SCHOOL



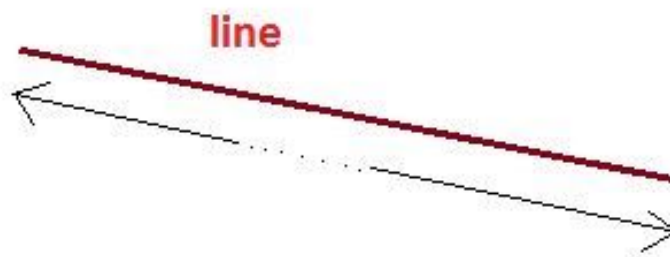
A JESUIT CHRISTIAN MINORITY INSTITUTION

- **Subject- Mathematics** Study Material -3 **Class 5**
- **Date : 7.05.2020**
- **Chapter: Geometry**

A **line** is one-dimensional. That is, a line has length, but no width or height. A line extends forever in both directions. A line is uniquely determined by two points. These two points can be placed anywhere in a 2D plane. A line is also categorised into different types. Let us learn here in detail.

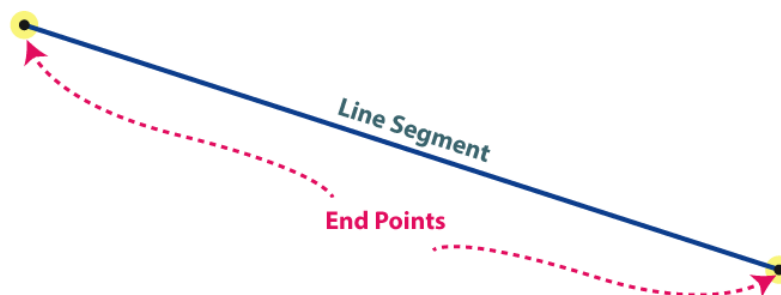
What is a Line?

- A line can be defined as a straight set of points that extend in opposite directions
- It has no ends in both directions(infinite)
- It has no thickness
- it is one-dimensional



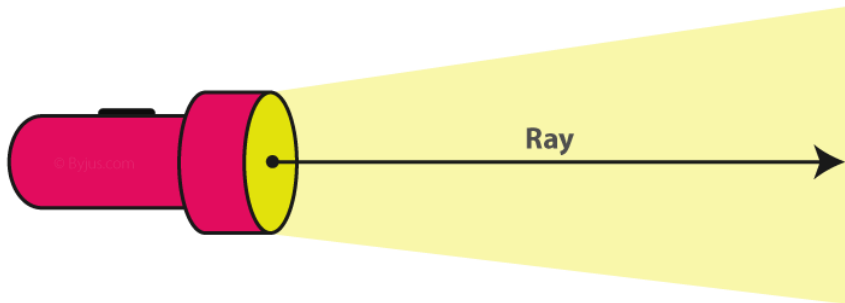
What is a Line segment?

- A line segment is part of a line
- It has a beginning point and an ending point



What is a Ray?

- A ray is a part of a line that has one endpoint (i.e. starting point) and it extends in one direction endlessly.



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Types of Line

In Geometry there are basically four types of lines. They are:

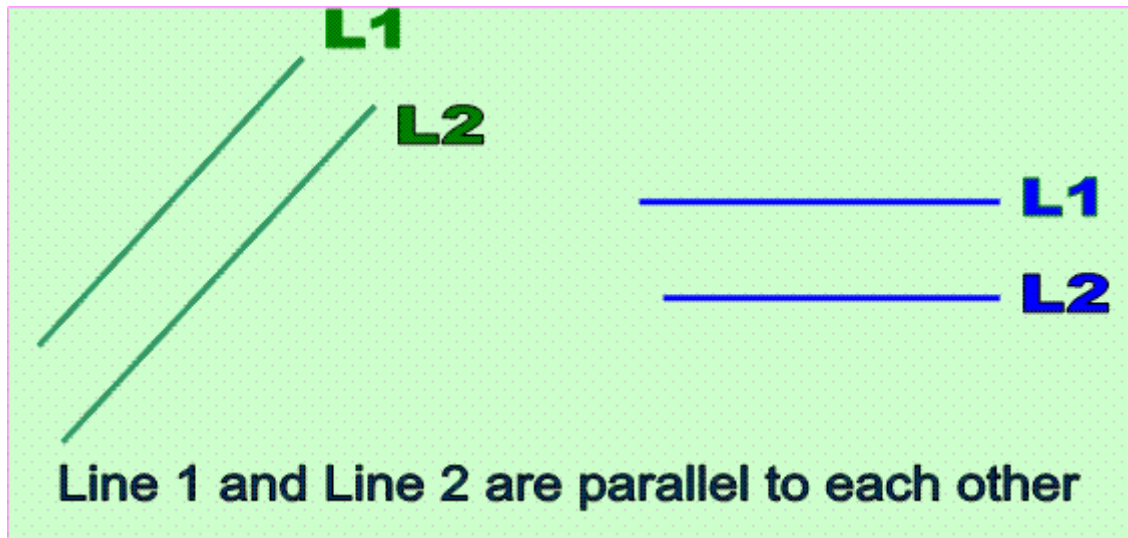
1. **Horizontal Lines:** When a line moves from left to right direction, it is horizontal.
2. **Vertical Lines:** When a runs from top to bottom it is vertical.
3. **Parallel Lines:** When two lines don't meet each other at any point, even at infinity, then they are parallel.
4. **Perpendicular Lines:** When two lines meet each other at an angle of 90 degrees, they are perpendicular to each other.

Parallel lines:

If two lines are always at the same distance apart and will not meet. This kinds of lines are known as parallel lines.

The length of two lines should not be same. The perpendicular distance between those two lines must be same anywhere.

Practical example: Railway track

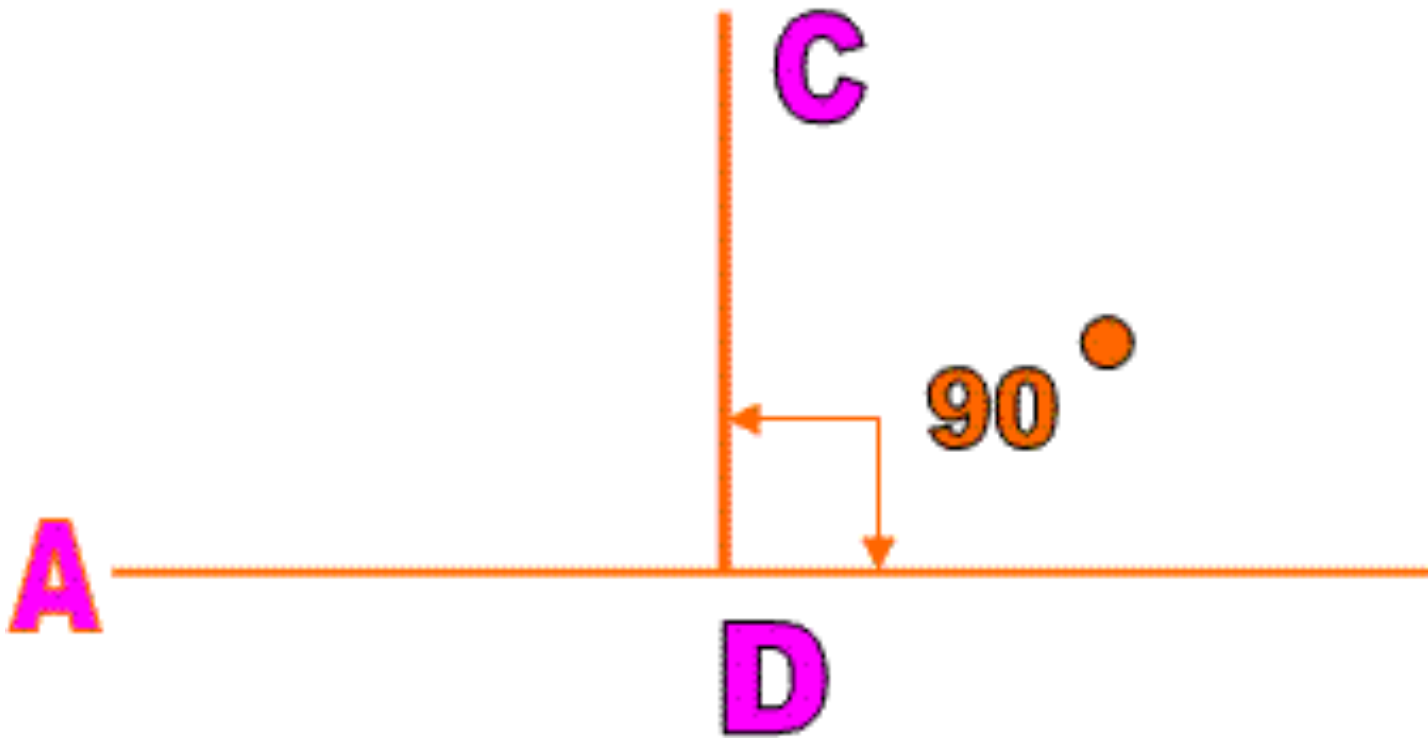


The symbol \parallel is use to represent parallel lines. In the above picture the first line is shorter than the second line but both the lines are in same direction.

The perpendicular distance between them are same and they should not meet anywhere.

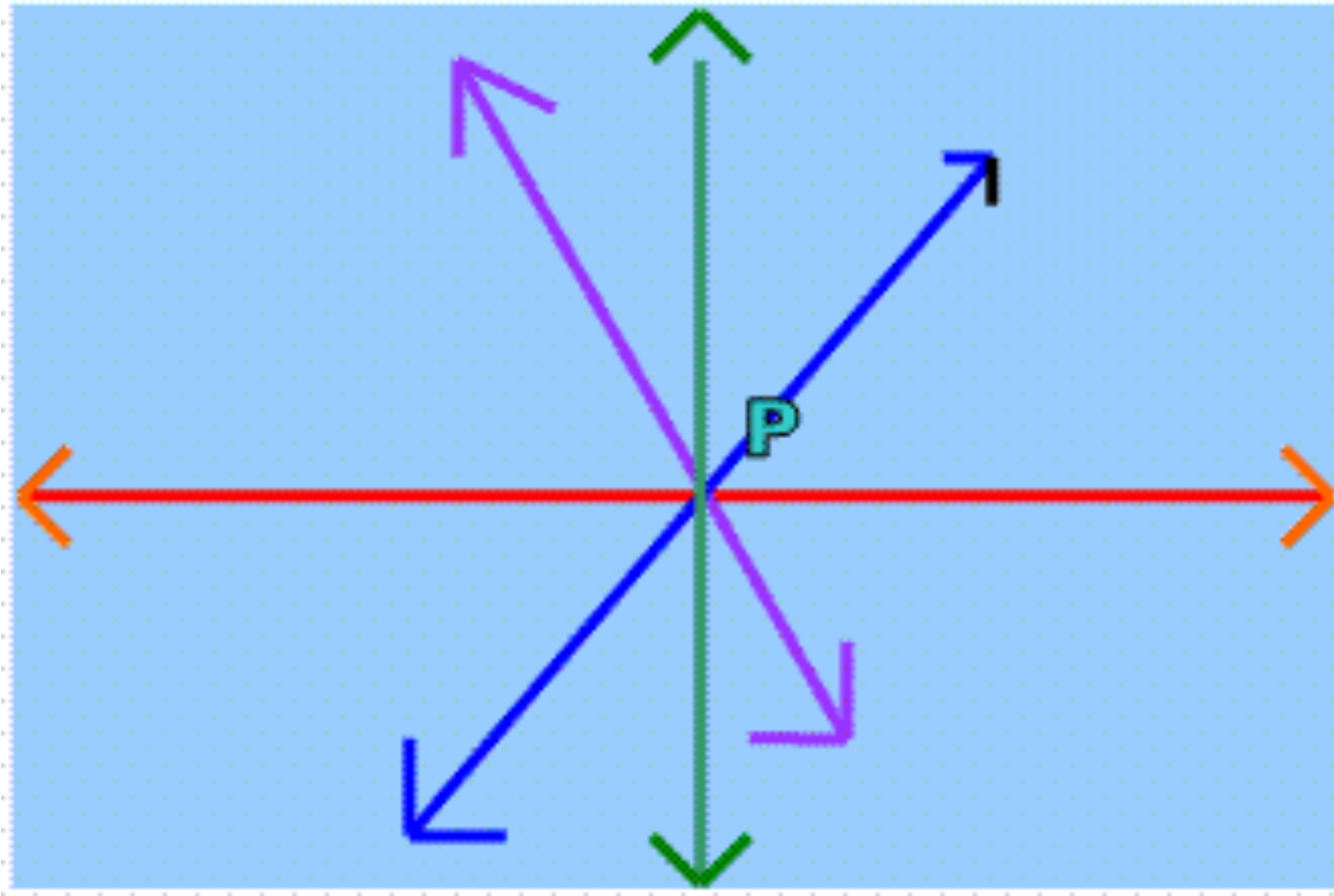
Perpendicular lines:

Perpendicular line mean two lines it should intersect and form right angles are called perpendicular lines. Perpendicular line is denoted by the symbol of (\perp)



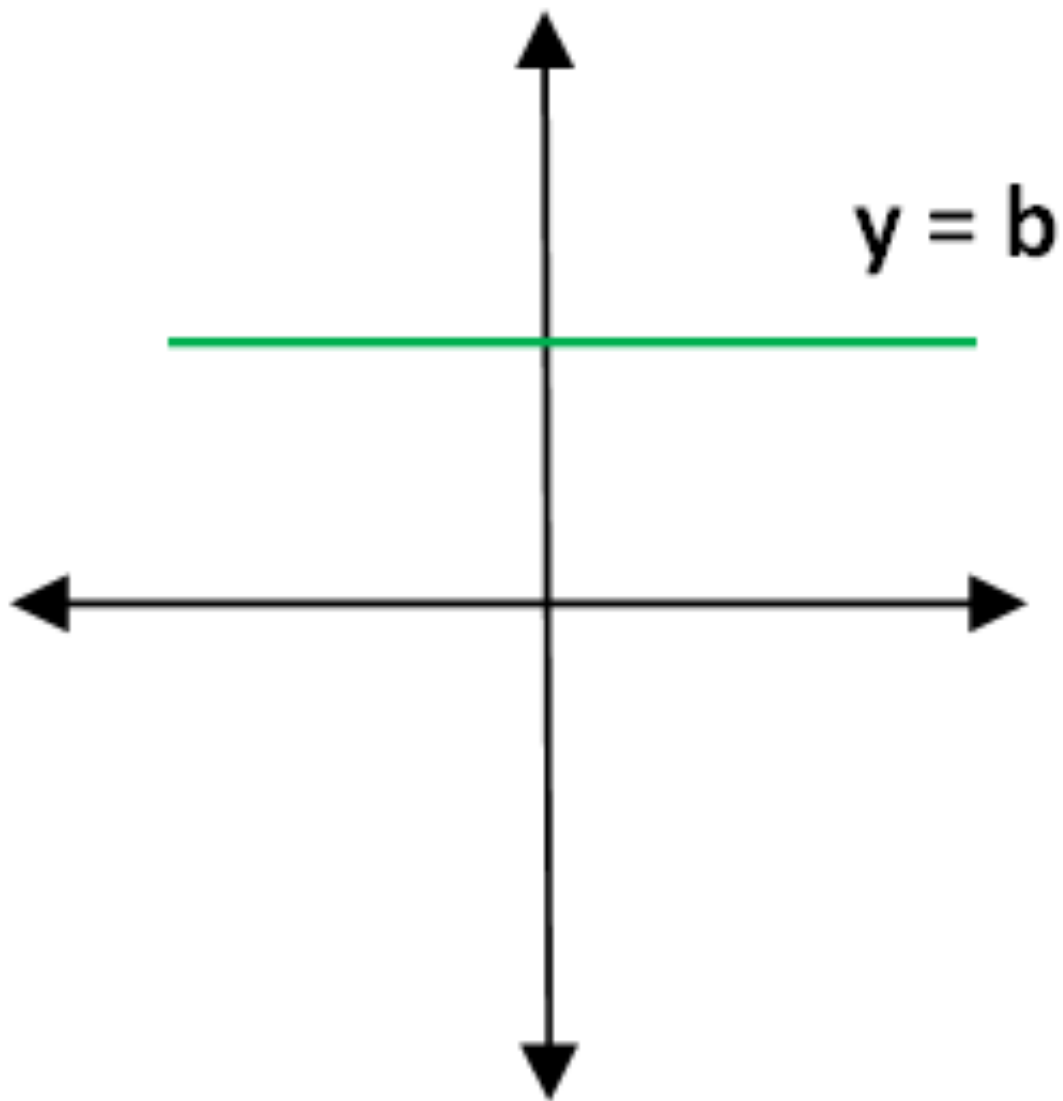
Concurrent lines:

If two or more lines passing through the same point then the lines are called concurrent lines.



Horizontal line:

A line which is parallel to x-axis is called as horizontal line.

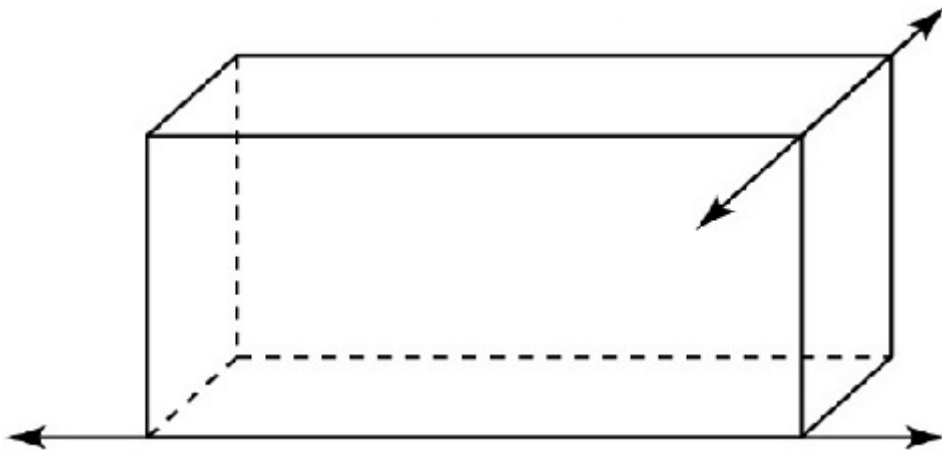


Vertical line:

A line which is perpendicular to x-axis is called as vertical line.

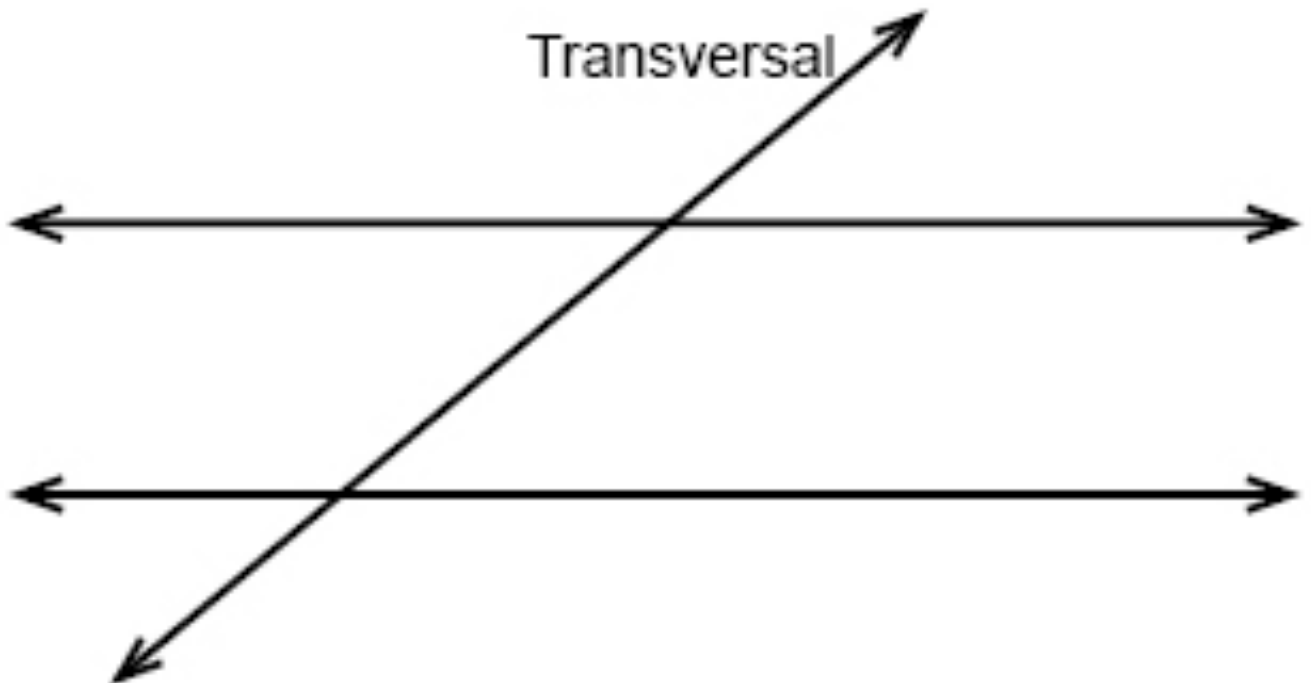
Skew lines:

When two non parallel lines are not intersecting in a space, they are called as skew lines.



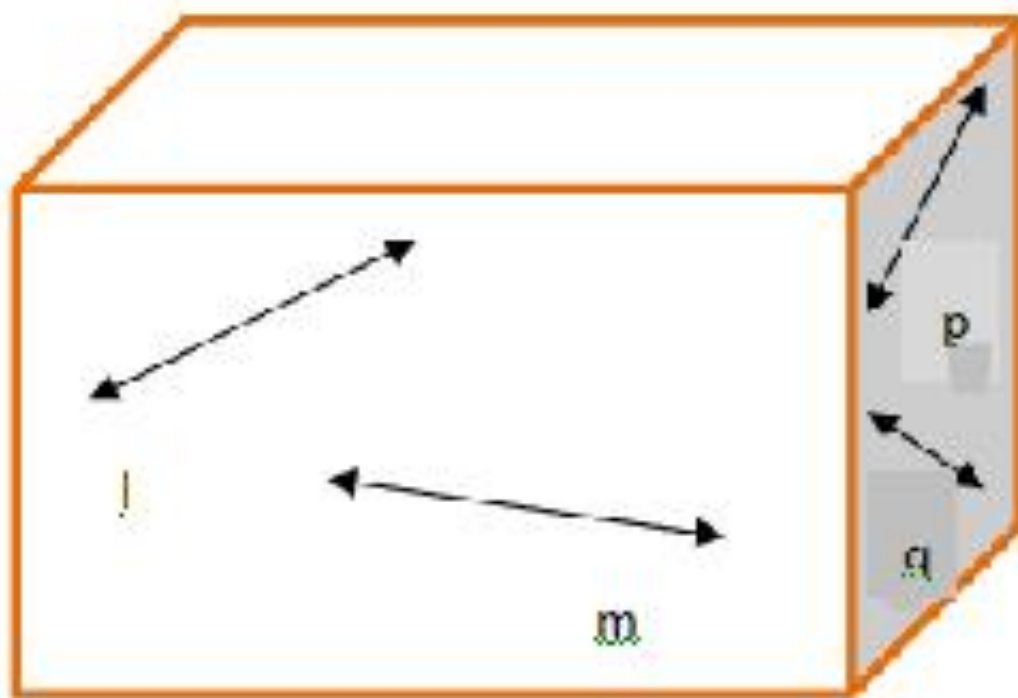
Tranversal line:

Tranversal line is a straight line that cuts 2 or more lines. The lines may or may not be parallel.



Coplanar lines

Coplanar lines are lines that lie on the same plane.



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