Pairs of Lines

Point:

A point is an exact location and is represented by a fine dot made by a sharp pen on a sheet of a paper.

Line:

Line is the collection of points which has only length, not breath and thickness. A line is a straight path that is endless in both directions. We denote it by AB or BA.

Line AB

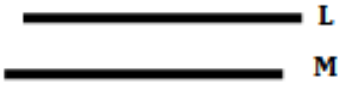
Intersecting Lines :

A pair of lines, line segments or rays are intersecting if they have a common point. This common point is their point of intersection.

Letter X

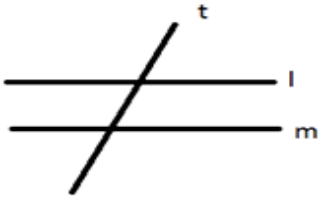
Parallel Lines :

If a pair of lines lie in the same plane and do not intersect when produced on either side, then such lines are parallel to each other. If L and M are two parallel lines, we read it as L is parallel to M.



Transversal Lines :

A straight line which cuts two or more straight lines at distinct points is called a transversal line.

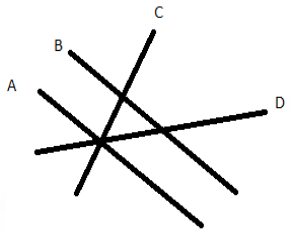


Let us understand with some examples:

Example: Give an example of intersecting lines and parallel lines from your surroundings.

Answer: Parallel lines: the railway tracks Intersecting line: roadways

Example: In the adjoining figure-



a. Name all the lines present in figure
b. Find pairs of intersecting lines
c. Find the parallel lines.

Answer:

a. Line A, line B, line C, line D
b. Line A and line C, line A and line D, line B and line C, line B and line D, line D and line C.
c. Line A and line B

Vertically Opposite Angles: When two lines intersect at a point, the angles that are formed exactly opposite each other at the intersection point are called vertically opposite angles. For example, if you draw a + symbol, the angles at each corner of the '+' that are directly across from each other are vertically opposite angles. They are always equal.

Adjacent Angles: Two angles are said to be adjacent if they have a common vertex and a common side, but do not have any common interior points. In simpler words, adjacent angles are side by side. They share a common ray and do not overlap. For example, if you have a straight line and you draw another line from the midpoint of the straight line at an angle, you create two adjacent angles on the straight line.

Linear Pair of Angles: A linear pair is a pair of adjacent angles whose non-common sides are opposite rays, meaning they form a straight line. Essentially, the sum of the angles in a linear pair is always 180 degrees. For example, if you have a straight line and you draw another line from the midpoint of the straight line at an angle, the two angles formed (which are also adjacent angles) make a linear pair.