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(Affiliated to CBSE up to +2 Level)

CLASS: VII

SUBJECT: MATHEMATICS

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## Revision Notes on Lines and Angles

**Point:** A point is a geometrical element which has no dimensions.



**Line:** A line is a straight path which has no endpoints.



**Line Segment:** A line segment is a straight path which has two endpoints.



**Ray:** A ray is a line which has one endpoint and endless from another side.



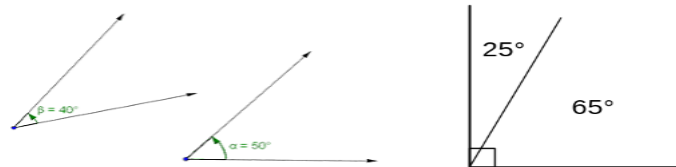
**Angles:** The corners made by the intersection of two lines or line segments are called Angles.



We write angle as  $\angle ABC$  in first figure and  $\angle XOY$ ,  $\angle ZOW$ ,  $\angle YOW$  and  $\angle XOZ$  are angles in the second figure.

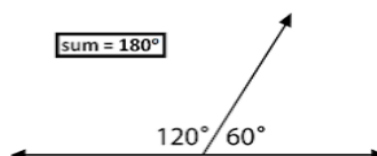
## Related Angles

**1. Complementary Angles:** If the sum of two angles is  $90^\circ$  then they are said to be complementary angles.



Or you can say that two angles which make up a right angle are called Complementary Angle.

**2. Supplementary Angles:** If the sum of two angles is  $180^\circ$  then they are said to be supplementary angles. If two angles are supplementary then they are the supplement to each other.



**3. Adjacent Angles:** It is the pair of two angles which are placed next to each other.

Adjacent angles have-

- A common vertex.
- A common arm.
- A non-common arm could be on either side of the common arm.



**4. Linear Pair:** A pair of adjacent angles whose non-common arm makes a single line i.e. they are the opposite rays.

A linear pair is also a pair of supplementary angles as their sum is  $180^\circ$ .

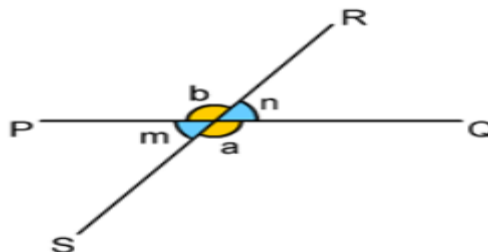


The above pair of angles is -

- Adjacent, as they have one common arm.
- Supplementary, as the sum of two angles, is  $180^\circ$ .
- The linear pair, as the sum is  $180^\circ$  and the non - common arms are opposite rays.

**5. Vertically Opposite Angles:** When two lines intersect each other then they form four angles. So that

- $\angle a$  and  $\angle b$  is pair of vertically opposite angles.
- $\angle n$  and  $\angle m$  is pair of vertically opposite angles.

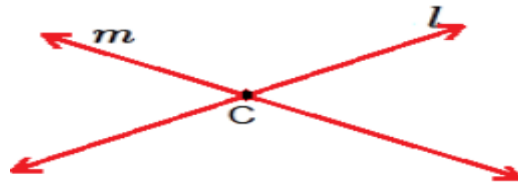


Vertically opposite angles are equal.

**Pairs of Lines 1. Intersecting Lines**

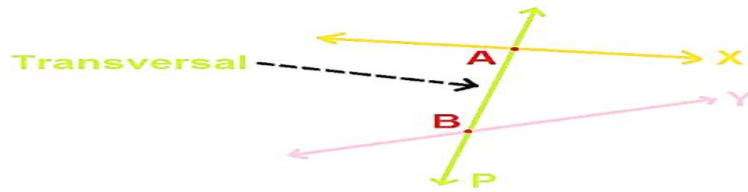
If two lines touch each other in such a way that there is a point in common then these lines are called intersecting lines.

That common point is called a Point of Intersection.



Here, line l and m intersect each other at point C.

**2. Transversal:** If a line intersects two or more lines at different points then that line is called Transversal Line.



**3. Angles made by a transversal:** When a transversal intersects two lines then they make 8 angles.

