

## Basic Concepts

- Two angles are called adjacent angles, if
  - they have the same vertex,
  - they have a common arm and
  - their non – common arms are on either side of the common arm.
- Two adjacent angles are said to form a linear pair of angles, if their non – common arms are two opposite rays.
- If a ray stands on a line, then the sum of the adjacent angles so formed is  $180^\circ$ .
- If the sum of two adjacent angles is  $180^\circ$ , then the non – common arms of the angles form a straight line.
- If two lines intersect each other, then the vertically opposite angles are equal.
- If a transversal intersects two parallel lines, then each pair of corresponding angles is equal.
- If a transversal intersects two lines such that a pair of corresponding angles is equal, then the two lines are parallel to each other.
- If a transversal intersects two parallel lines, then each pair of alternate interior angles is equal.
- If a transversal intersects two lines such that a pair of alternate interior angles is equal, then the two lines are parallel.
- If a transversal intersects two parallel lines, then each pair of interior angles on the same side of the transversal is supplementary.
- If a transversal intersects two lines such that a pair of interior angles on the same side of the transversal is supplementary, then the two lines are parallel.
- Lines which are parallel to the same line are parallel to each other.
- The sum of the three angles of a triangle is  $180^\circ$ .
- If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interior opposite angles.