

# Key Notes

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## Chapter - 5 Lines and Angles

- We recall that
  - (i) A line-segment has two end points.
  - (ii) A ray has only one end point (its vertex); and
  - (iii) A line has no end points on either side.
- An angle is formed when two lines (or rays or line-segments) meet.

Pairs of Angles	Condition
Two complementary angles	Measures add up to $90^\circ$
Two supplementary angles	Measures add up to $180^\circ$
Two adjacent angles	Have a common vertex and a common arm but no common interior.
Linear pair	Adjacent and supplementary

- When two lines  $l$  and  $m$  meet, we say they intersect; the meeting point is called the point of intersection.
  - When lines drawn on a sheet of paper do not meet, however far produced, we call them to be *parallel* lines.
  - **Point:** A point name a location.
  - **Line:** A line is perfectly straight and extends forever in both direction.
  - **Line segment:** A line segment is the part of a line between two points.
  - **Ray:** A ray is part of a line that starts at one point and extends forever in one direction.
  - **Intersecting lines:** Two or more lines that have one and only one point in common. The common point where all the intersecting lines meet is called the point of intersection.
  - **Transversal:** A line intersects two or more lines that lie in the same plane in distinct points.
  - **Parallel lines:** Two lines on a plane that never meet. They are always the same distance apart.
  - **Complementary Angles:** Two angles whose measures add to  $90^\circ$ .
  - **Supplementary Angles:** Two angles whose measures add to  $180^\circ$ .
  - **Adjacent Angles:** Two angles have a common vertex and a common arm but no common interior points.
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- **Linear pairs:** A pair of adjacent angles whose non-common sides are opposite rays.
  - **Vertically Opposite Angles:** Two angles formed by two intersecting lines have common arm.
  - **Angles made by Transversal:** When two lines are intersecting by a transversal, eight angles are formed.
  - **Transversal of Parallel Lines:** If two parallel lines are intersected by a transversal, each pair of:
    - Corresponding angles are congruent.
    - Alternate interior angles are congruent.
    - Alternate exterior angles are congruent.
  - If the transversal is perpendicular to the parallel lines, all of the angles formed are congruent to  $90^\circ$  angles.
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