

Lines and Angles



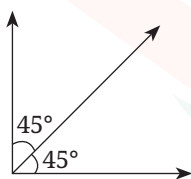
Basic Definitions in Geometry

Terms	Definition
Point	A point is an exact location in space. It has no length, no breadth, and no thickness.
Line segment	The shortest distance between two points is called a line segment.
Line	By extending a line segment indefinitely on both sides, a line is obtained.
Intersecting lines	If two distinct lines meet or cross at a point, they are called intersecting lines.
Parallel lines	Parallel lines are lines which are always the same distance apart and never intersect anywhere in a plane.
Ray	A ray is a line which starts from a particular point and goes infinitely towards a particular direction.
Curve	A curve is a line that bends continuously and does not remain straight.
Simple curve	A curve that never crosses itself is a simple curve.
Closed and open curves	A curve is closed if its ends are joined. Otherwise, it is an open curve.
Angle	It is made up of two rays which are starting from a common point.

Angles

An angle is formed when two straight lines or rays meet at a common endpoint. The common point of contact is called the vertex of an angle. The symbol $\angle$ represents an angle. Angles are measured in degrees ($^\circ$).

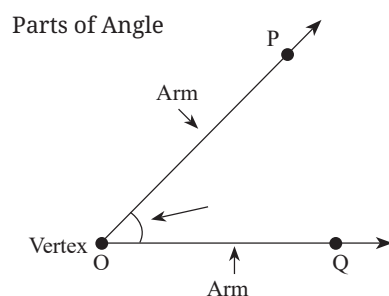
For example, 45 degrees is represented as 45°



Parts of an Angles

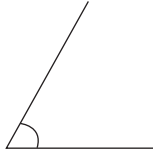
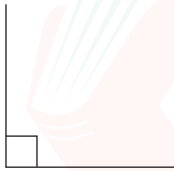
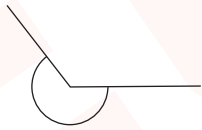
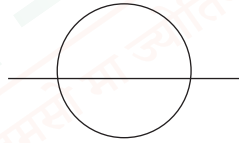
The main parts of an angle include:

- 1. Vertex:** The common endpoint where the two rays meet.
- 2. Arms (or Sides):** The two rays that form the angle.



Different Types of Angles in Geometry

1. **Acute Angle:** Greater than 0° but less than 90° .
2. **Right Angle:** Equals to 90° .
3. **Obtuse Angle:** Greater than 90° but less than 180° .
4. **Straight Angle:** Measures exactly 180° and forms a straight line.
5. **Reflex Angle:** Greater than 180° but less than 360° .
6. **Complete Angle/Full Rotation Angle:** Measures exactly 360° .
7. **Adjacent Angles:** Adjacent angles share a common vertex and a common arm but do not overlap.
8. **Complementary Angles:** If the sum of two angle measures is 90° .
9. **Supplementary Angles:** If the sum of two angle measures is 180° .
10. **Vertically Opposite Angles:** Formed when two lines intersect. They are opposite each other and are always equal in measure.

		
Acute Angle	Right Angle	Obtuse Angle
		
Straight Angle	Reflex Angle	Complete Angle