CLASS 9 MATHS – CHAPTER 6

LINES AND ANGLES – ALL DEFINITIONS

Basic Angle Definitions

- **Angle**: A figure formed by two rays having a common endpoint.
- **Vertex**: Common endpoint of the two rays forming an angle.
- **Arms of an angle**: The two rays forming the angle.
- **Straight line**: A line that forms an angle of 180°.
- **Transversal**: A line that intersects two or more lines at distinct points.

Types of Angles

- **Acute angle**: Less than 90°
- **Right angle**: Equal to 90°
- **Obtuse angle**: More than 90° but less than 180°
- **Straight angle**: Equal to 180°
- **Reflex angle**: More than 180° but less than 360°
- **Complete angle**: Equal to 360°

Angle Properties & Formulae

- **Angle on a straight line = 180°**
- **Angle around a point = 360°**
- **Sum of complementary angles = 90°**
- **Sum of supplementary angles = 180°**

Parallel Lines and a Transversal

When a transversal cuts two parallel lines:

- **Corresponding angles are equal**
- **Alternate interior angles are equal**
- **Interior angles on the same side of the transversal**
  → Sum = **180°**
- **Exterior angles on the same side of the transversal**
  → Sum = **180°**

Linear Pair

- A **linear pair** is a pair of adjacent angles whose non-common arms form a straight line.
- **Sum of angles in a linear pair = 180°**

Vertically Opposite Angles

- When two straight lines intersect, the angles formed opposite to each other are called **vertically opposite angles**.
- **Vertically opposite angles are equal**

Tests for Parallel Lines

Two lines are parallel if:

- Corresponding angles are equal
- Alternate interior angles are equal
- Interior angles on the same side of a transversal sum to 180°

Important Angle Relationships

- Linear pair → **180°**
- Vertically opposite angles → **Equal**
- Complementary angles → **90°**
- Supplementary angles → **180°**
- Straight angle → **180°**
- Complete angle → **360°**