CLASS 9 MATHS - CHAPTER 7

TRIANGLES – ALL DEFINITIONS

Basic Definitions

• **Triangle**: A closed figure formed by three line segments.

• **Vertex**: The point where two sides of a triangle meet.

• **Angle of a triangle**: The angle formed between two sides at a vertex.

• **Exterior angle**: The angle formed by extending one side of a triangle.

Rules for Congruence of Triangles

• **SSS** – Side Side Side

• **SAS** – Side Angle Side

• **ASA** – Angle Side Angle

• **AAS** – Angle Angle Side

• **RHS** – Right angle Hypotenuse Side

Types of Triangles (Sides)

• **Scalene triangle**: All sides are of different lengths.

• **Isosceles triangle**: Two sides are equal.

• **Equilateral triangle**: All three sides are equal.

Types of Triangles (Angles)

• **Acute-angled triangle**: All angles are less than 90°.

• **Right-angled triangle**: One angle is equal to 90°.

• **Obtuse-angled triangle**: One angle is greater than 90°.

Properties of Congruent Triangle

• Corresponding sides are equal

• Corresponding angles are equal

• Areas of congruent triangles are equal

• Congruent triangles have **equal perimeters**.

Equilateral Triangle Properties

• All sides are equal

• All angles are equal

• Each angle = **60°**

• Altitude, median, and angle bisector are **the same line**.

Angle Sum Property of Triangle

• Sum of the interior angles of a triangle = **180°**

$$\angle A + \angle B + \angle C = 180°$$

Exterior Angle Property

• An exterior angle of a triangle is equal to the sum of the two interior opposite angles.

Exterior angle
= Sum of two interior opposite angles