Area of a Triangle

Understanding the Topic

- Area of a triangle means the space inside the triangle.
- It tells us how much surface the triangle covers.
- The area depends on its base and height.
- The base is the bottom of the triangle and the height is the line from the top to the base at a right angle.

Formula of Area of a Triangle

- Area = $\frac{1}{2}$ × base × height

Units of Area

- Always in square units like cm², m² etc

Use of Triangle Area

- Useful in construction design paper cutting etc

Examples with Solutions

1. Example – Simple Calculation (Easy)

Question: Find the area of a triangle with base 6 cm and height 4 cm.

Solution: $\frac{1}{2}$ × 6 × 4 = 12 cm²

2. Example – Different Numbers (Moderate)

Question: A triangle has base 10 cm and height 5 cm Find the area.

Solution: $\frac{1}{2}$ × 10 × 5 = 25 cm²

3. Example – Real-life Use (Moderate)

Question: A triangular garden has base 12 m and height 6 m Find the area.

Solution: $\frac{1}{2}$ × 12 × 6 = 36 m²

4. Example – Word Problem (Moderate)

Question: A signboard is shaped like a triangle with base 8 m and height 3 m Find the area to be painted.

Solution: $\frac{1}{2} \times 8 \times 3 = 12\ m^2$

5. Example – Fractional Base (Moderate)

Question: A triangle has base 9 cm and height $\frac{1}{2}$ cm Find its area.

Solution: $\frac{1}{2} \times 9 \times \frac{1}{2} = \frac{9}{4} = 2.25\ cm^2$

Summary Points

- Area of triangle is the surface inside it.
- Formula = $\frac{1}{2}$ × base × height.
- Base and height must be at right angle.
- Area is always written in square units.
- Used in drawing construction craft and design.
- Convert to same units before using formula.
- Helps in solving real-world problems.
- Remember to divide the product of base and height by 2.
- Base and height can be in cm m or any unit of length.
- Practice different values to get better with triangle area.