# Area

# **Understanding: Area**

- Area is the amount of space covered by a closed figure.
- It is measured in square units like cm<sup>2</sup>, m<sup>2</sup>, km<sup>2</sup>.
- Every 2D shape has a different formula to calculate its area.
- Area helps in finding how much surface is needed to paint, tile, cover, or fill.

### **Important Points**

- Area of a square = side × side
- Area of a rectangle = length × breadth
- Area of a triangle =  $\frac{1}{2}$  × base × height
- Area of a parallelogram = base × height
- Area of a circle =  $\pi \times r \times r$

## Always use the same unit for all dimensions before calculating area



### **Examples with Solutions**

Example: Find the area of a square with side 6 cm

Area =  $6 \times 6 = 36 \text{ cm}^2$ 

Area =  $36 \text{ cm}^2$ 

Example: Find the area of a rectangle with length 10 m and breadth 4 m

Area =  $10 \times 4 = 40 \text{ m}^2$ 

Area =  $40 \text{ m}^2$ 

Example: Find the area of a triangle with base 8 cm and height 5 cm

Area = 
$$\frac{1}{2} \times 8 \times 5 = 4 \times 5 = 20 \text{ cm}^2$$
  
Area = 20 cm<sup>2</sup>

Example: Find the area of a parallelogram with base 12 m and height 7 m

Area =  $12 \times 7 = 84 \text{ m}^2$ Area =  $84 \text{ m}^2$ 

**Example:** Find the area of a circle with radius 3.5 cm using  $\pi = \frac{22}{7}$ 

Area =  $\frac{22}{7} \times 3.5 \times 3.5 = \frac{22}{7} \times 12.25 = 38.5 \text{ cm}^2$ Area = 38.5 cm<sup>2</sup>

#### **Summary Points**

- Area is the space covered inside a shape.
- Measured in square units like cm<sup>2</sup>, m<sup>2</sup>.
- Use correct formulas for each shape.
- Convert all units before calculating.
- Area is used in flooring, painting, farming, and construction.