

# Chapter 11

## Perimeter and Area

### Squares and Rectangles

- Perimeter of a regular polygon = number of sides  $\times$  length of one side
- Perimeter of a square =  $4 \times \text{side}$
- Perimeter of a rectangle =  $2 \times (l + b)$
- Area of a rectangle =  $l \times b$
- Area of a square = side  $\times$  side

### Triangles as Parts of Rectangles

- If we cut the rectangle along its diagonal to get two triangles, then  
The area of each triangle =  $\frac{1}{2}$  (Area of the rectangle)
- If we take a square and divide it into 4 triangles, then  
The area of each triangle =  $\frac{1}{4}$  (Area of the square)

### Area of Parallelogram

- The area of parallelogram = base  $\times$  height.
- Any side of a parallelogram can be chosen as base of the parallelogram. The perpendicular dropped on that side from the opposite vertex is known as height (altitude).

## Area of a Triangle

- The area of triangle =  $\frac{1}{2} \times \text{base} \times \text{height}$ .
- Area of equilateral triangle =  $\frac{\sqrt{3}}{4} \times (\text{side})^2$
- All the congruent triangles are equal in area but the triangles equal in area need not be congruent.

## Circle

- The distance around a circle is known as its circumference.
- The ratio of circumference and diameter of a circle is a constant and is denoted by it ( $\pi$ ).
- Approximate value of  $\pi$  is taken as  $\frac{22}{7}$  or 3.14.
- Circumference of a circle of radius  $r$  =  $2\pi r$
- Area of a circle of radius  $r$  =  $\pi r^2$ .