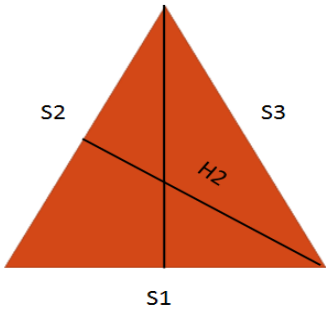
**IMPORTANT FORMULAS TO REMEMBER:**

TRIANGLE:




Area of a triangle = ½ x Base x Height

Perimeter of a triangle = $S_1 + S_2 + S_3$

Area of a triangle from sides:

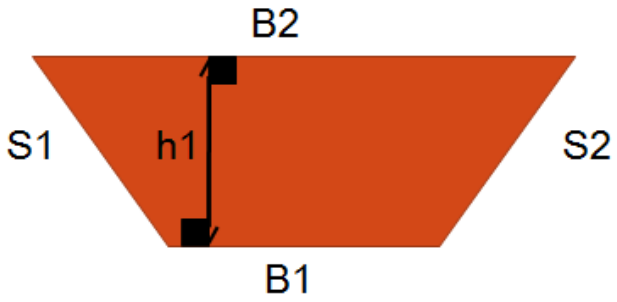
Calculate S = $\frac{S1 + S2 + S3}{2}$

Area = $\sqrt{(S(S-S1)\ (S-S2)\ (S-S3))}$

**Note**: Any side of a triangle can be taken as base. Height should be the perpendicular distance between the selected base and the opposite vertex. For example, if you take S2 as the base, then H2 is taken as the height.

TRAPEZOID:

- Two opposite sides are parallel



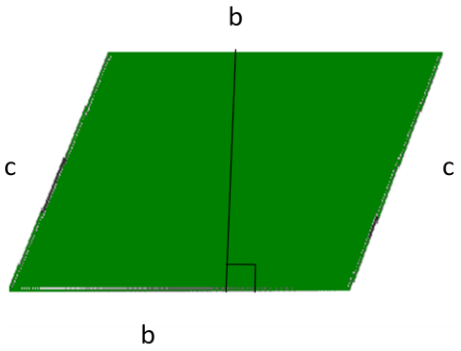

**B1 || B2**

Area of a trapezoid = ½ x ($B_1$+ $B_2$) x Height
Perimeter of a trapezoid = $B_1 + B_2 + S_1 + S_2$

**Note**: The base of the trapezium is taken as either $B_1$ or $B_2$, the height (perpendicular distance) is the same in both the cases.

PARALLELOGRAM:

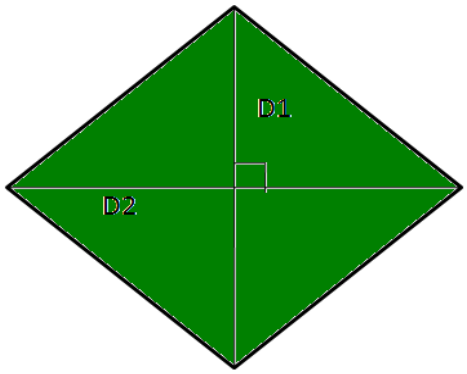
- Opposite sides are parallel and equal
- Opposite angles are equal




Area of a parallelogram = base x height
Perimeter of a parallelogram = 2*b* + 2*c*

RHOMBUS:

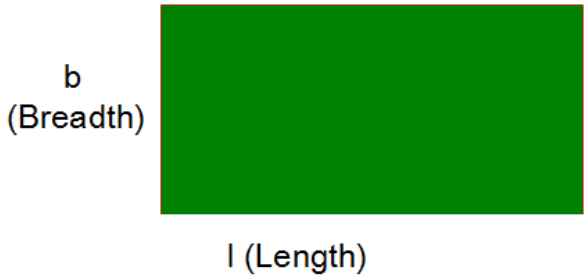
- Same properties as a parallelogram
- All sides are equal



Area of a rhombus = ½ x $D_1$ x $D_2$

RECTANGLE:

- Opposite sides of a rectangle are parallel and equal
- All angles are at 90 degrees



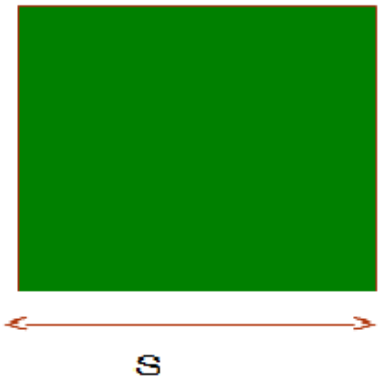

Diagonal of a rectangle = $\sqrt{(l^2 + b^2)}$

Area of a rectangle = $l$ x $b$

Perimeter of a rectangle = $2(l + b)$

SQUARE:

- All angles are at 90 degrees
- All sides are congruent

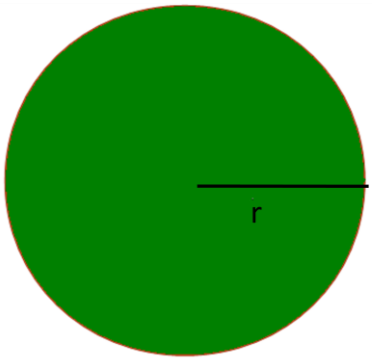



Diagonal of a square = $S\sqrt{2}$

Area of a square = $S^2$

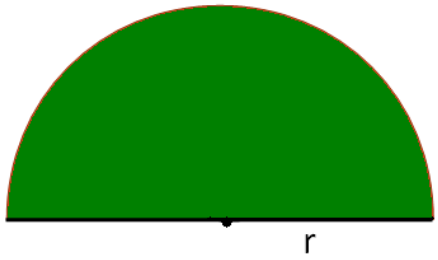
Perimeter of a square = 4S

CIRCLE:




Area of a circle = $\pi r^2$
Perimeter (Circumference) of a circle = $2\pi r$

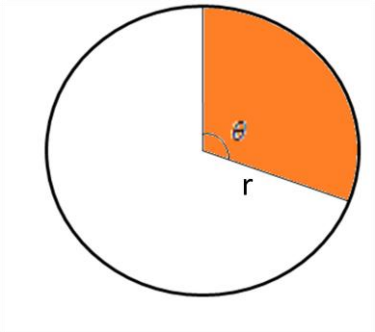
SEMICIRCLE:




Area of a semicircle = $\frac{\pi r^2}{2}$
Perimeter of a semicircle = $\pi r + 2r$

$r$ = Radius of the circle

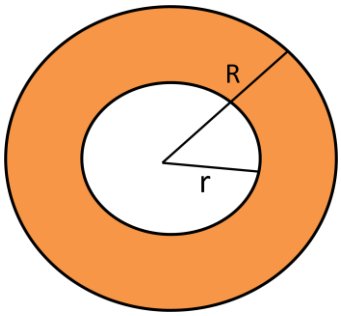
CIRCULAR SECTOR:




Length of a sector = $\frac{\theta}{360} \times 2\pi r$

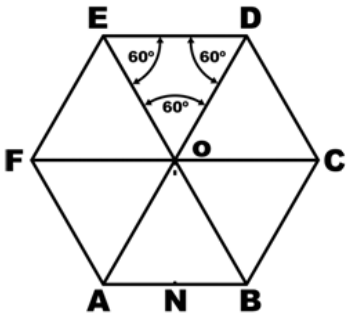
Area of a sector = $\frac{\theta}{360} \times \pi r^2$

AREA OF CIRCULAR RING = $\pi$ ($R^2 - r^2$)



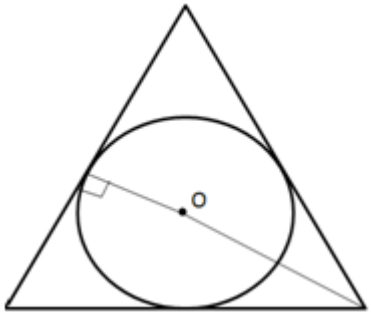

**A FEW POINTS TO REMEMBER:**

1. Area of an equilateral triangle = $\frac{\sqrt{3}}{4} \times a^2$; where $a$ is the length of a side of the triangle
2. Area of a regular hexagon = 6 × Area of one equilateral triangle formed



3. INSCRIBED AND CIRCUMSCRIBED FIGURES:

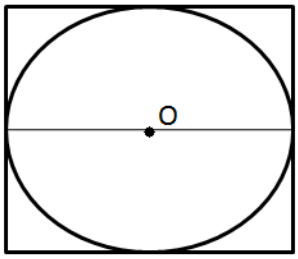
Circle inscribed in a triangle:




Radius of a circle = $\frac{2a}{p}$ ; where a = Area of the triangle and *p* = Perimeter of the triangle

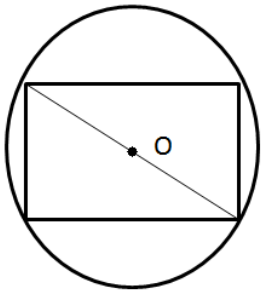
If the triangle is equilateral, then radius of the circle = $\frac{s}{2\sqrt{3}}$ ; where *s* = Length of a side of the triangle

CIRCLE INSCRIBED IN A SQUARE:




Diameter of a circle = Length of the side of the square

SQUARE INSCRIBED IN A CIRCLE:




Diameter of a circle = Length of the diagonal of the square