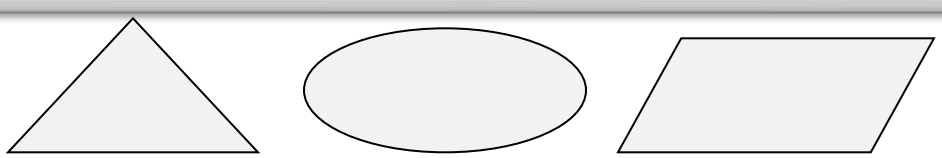
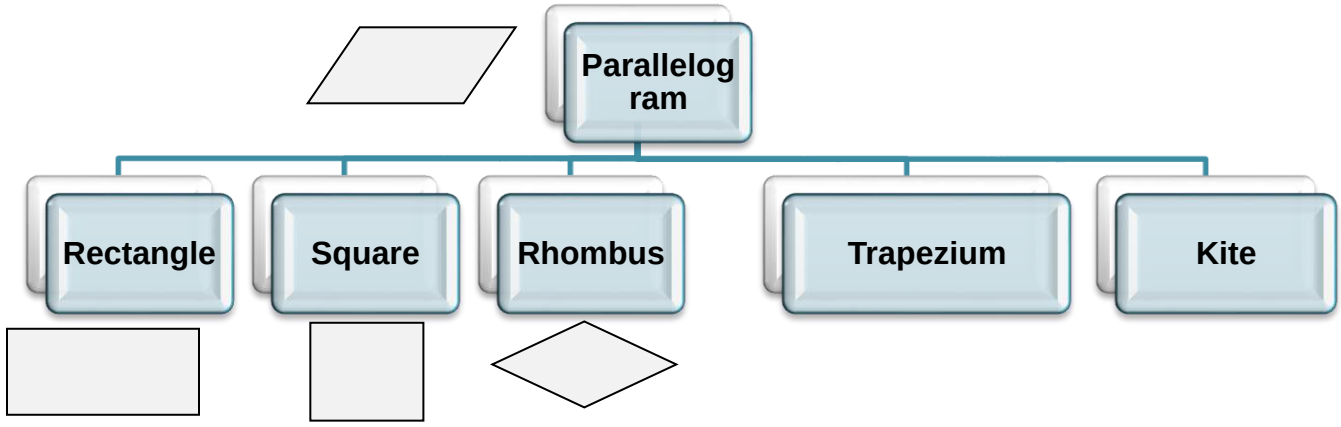
Area of a Trapezium and Polygon

AREA: The area of a plane closed figure is the measure of the region(surface) enclosed by its boundary.
The area shaded in each figure gven below represents area.

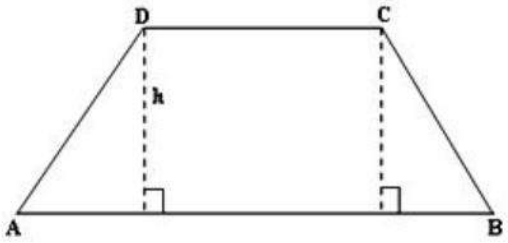


Square, rectangle, parallelogram, triangle, equilateral triangle, rhombus, kite, trapezoid are different types of Polygon



Area of a Trapezium

A trapezium is a quadrilateral having one pair of parallel opposite sides. In the given figure, ABCD is a trapezium in which AB ‖ DC.



Area of a Trapezium and Polygon

Area of a Trapezium:

Let ABCD be a trapezium in which AB ∥ DC, CE ⊥ AB, DF ⊥ AB and CE = DF = h.

Area of a Polygon

The area of a polygon measures the size of the region enclosed by the polygon. It is measured in units squared.

Area of a Trapezium and Polygon

Shape	Area Formula
Triangle	$A = \frac{1}{2}bh$ where b = base, h = height $A = \sqrt{s(s-a)(s-b)(s-c)}$ where a, b, and c are the lengths of the sides and $s = \frac{1}{2}(a+b+c)$ (half the perimeter) $A = \frac{1}{2}ab\sin C$ where a, b are the lengths of two sides and C is the angle between them
Equilateral Triangle	$A = \frac{s^2\sqrt{3}}{4}$ where s = side
Rectangle	$A = lw$ where l = length, w = width
Square	$A = s^2$ where s = side
Parallelogram	$A = bh$ where b = base, h = height
Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$ where h = height, b_1 and b_2 are parallel sides
Kite or Rhombus	$A = \frac{1}{2}d_1d_2$ where d_1 and d_2 are diagonals
Regular Polygons	$A = \frac{1}{2}ap$ where a = apothem, p = perimeter