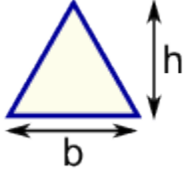
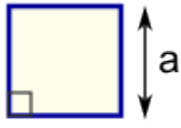
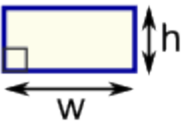
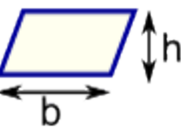
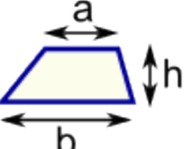

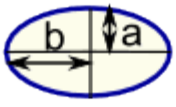
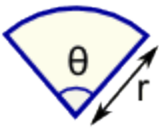
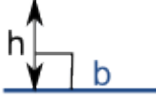
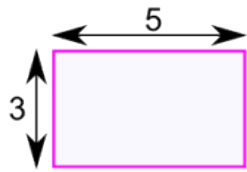


Area of Plane Shapes

Area is the size of a surface.

	<p><u>Triangle</u> Area = $\frac{1}{2} \times b \times h$ b = base h = vertical height</p>		<p><u>Square</u> Area = a^2 a = length of side</p>
	<p><u>Rectangle</u> Area = $w \times h$ w = width h = height</p>		<p><u>Parallelogram</u> Area = $b \times h$ b = base h = vertical height</p>
	<p><u>Trapezoid</u> Area = $\frac{1}{2}(a+b) \times h$ h = vertical height</p>		<p><u>Circle</u> Area = $\pi \times r^2$</p>
	<p><u>Ellipse</u> Area = πab</p>		<p><u>Sector</u> Area = $\frac{1}{2} \times r^2 \times \theta$ r = radius θ = angle in radians</p>
<p>Note: h is at <u>right angles</u> to b</p>			

Example: What is the area of this rectangle?



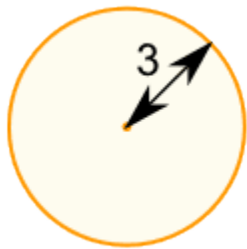
The formula is:

$$\begin{aligned} \text{Area} &= w \times h \\ w &= \text{width} \\ h &= \text{height} \end{aligned}$$

We know $w = 5$ and $h = 3$, so:

$$\text{Area} = 5 \times 3 = \mathbf{15}$$

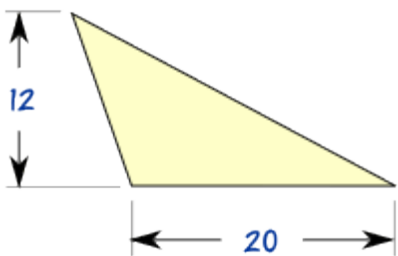
Example: What is the area of this circle?



Radius = $r = 3$

$$\begin{aligned} \text{Area} &= \pi \times r^2 \\ &= \pi \times 3^2 \\ &= \pi \times (3 \times 3) \\ &= 3.14159... \times 9 \\ &= \mathbf{28.27} \text{ (to 2 decimal places)} \end{aligned}$$

Example: What is the area of this triangle?



$$\text{Height} = h = 12$$

$$\text{Base} = b = 20$$

$$\text{Area} = \frac{1}{2} \times b \times h = \frac{1}{2} \times 20 \times 12 = \mathbf{120}$$