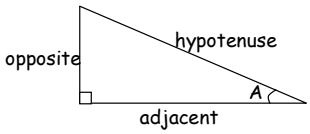
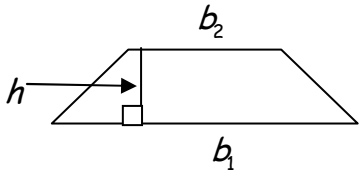
# Geometry Formulas

<table>
<tr><td>Pythagorean Theorem: $a^2 + b^2 = c^2$<br><br>Conversion factors:<br>1 yd = 3 ft = 36 inches<br>1 m = 100 cm = 1000 mm<br>1 km = 1000 m</td><td>$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$<br>$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$<br>$\tan A = \frac{\text{opposite}}{\text{adjacent}}$<br>  </td></tr>
<tr><td colspan="2">$A$ = area; $b$ = base; $C$ = circumference; $h$ = height;<br>$l$ = length; $r$ = radius; $SA$ = surface area; $V$ = volume</td></tr>
<tr><td>Circle: $C = 2\pi r$; $A = \pi r^2$</td><td>Rectangle: $P = 2b + 2h$; $A = bh$</td></tr>
<tr><td>Triangle Area Formulas:<br>$A = \frac{1}{2}bh$<br>Heron's Formula:<br>$A = \sqrt{s(s-a)(s-b)(s-c)}$<br>where $s = \frac{1}{2}(a+b+c)$</td><td>Trapezoid: $A = \frac{1}{2}(b_1 + b_2)h$<br>  </td></tr>
<tr><td>Cylinder: $V = \pi r^2 h$; $SA = 2\pi r(r+h)$</td><td>Sphere: $V = \frac{4}{3}\pi r^3$; $SA = 4\pi r^2$</td></tr>
<tr><td>Rectangular solid: $SA = 2(bh + lh + bl)$<br>$V = bhl$</td><td>Solid with matching base and top:<br>$V = (\text{area of base}) * h$</td></tr>
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