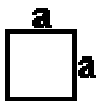
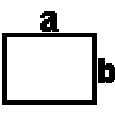


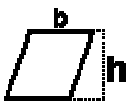
(Math)

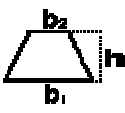
($\pi = \pi = 3.141592\dots$)


Areas

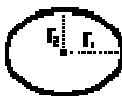
square = a^2 

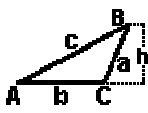
rectangle = ab 

parallelogram = bh 

trapezoid = $\frac{h}{2} (b_1 + b_2)$ 

circle = πr^2 

ellipse = $\pi r_1 r_2$ 

triangle = $(1/2) b h$ 


equilateral triangle = $(1/4)\sqrt{3} a^2$

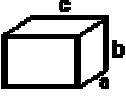
triangle given SAS = $(1/2) a b \sin C$


triangle given a,b,c = $\sqrt{s(s-a)(s-b)(s-c)}$ when $s = (a+b+c)/2$ (**Heron's formula**)

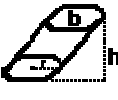
regular polygon = $(1/2) n \sin(360^\circ/n) S^2$
 when $n = \#$ of sides and $S =$ length from center to a corner


Volumes


cube = a^3 


rectangular prism = $a b c$ 


irregular prism = $b h$ 

cylinder = $b h = \pi r^2 h$ 


pyramid = $(1/3) b h$ 

cone = $(1/3) b h = 1/3 \pi r^2 h$ 

sphere = $(4/3) \pi r^3$ 

ellipsoid = $(4/3) \pi r_1 r_2 r_3$ 

Surface Areas


cube = $6 a^2$ 

prism:

(lateral area) = perimeter(**b**) L

(total area) = perimeter(**b**) L + 2b



sphere = $4 \pi r^2$ 

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