

Surface Area & Volume Formulas

Circles:

Circumference: $C = 2\pi r$

Area: $A = \pi r^2$

Rectangles:

Perimeter: $P = 2l + 2w$

Area: $A = lw$

Squares: (s = length of a side)

Perimeter: $P = 4s$

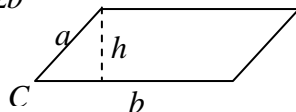
Area: $A = s^2$

Parallelograms: (a and b are length of sides)

Perimeter: $P = 2a + 2b$

Area: $A = bh$

$A = ab \sin C$



Triangles: (Any)

Area: $A = \frac{1}{2}bh$

Area: $A = \frac{1}{2}ab \sin C$

Right Triangles:

Pythagorean Theorem: $a^2 + b^2 = c^2$

Equilateral Triangles: (s = length of side)

Area: $A = \frac{\sqrt{3}}{4}s^2$

Perimeter: $P = 3s$

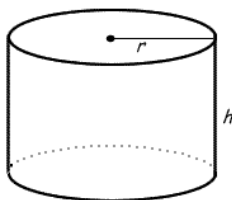
Cylinders:

Volume: $V = \pi r^2 h$

Surface Area:

$SA = 2\pi r^2 + 2\pi rh = 2\pi r(r + h)$

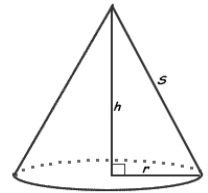
Lateral Area: $LA = 2\pi rh$



Cones:

Volume: $V = \frac{1}{3}\pi r^2 h$

Surface Area: $SA = \pi rs + \pi r^2$



Note:

The radius r and height h are always in proportion

$$\frac{r_1}{h_1} = \frac{r_2}{h_2}$$

Spheres:

Volume: $V = \frac{4}{3}\pi r^3$

Surface Area: $SA = 4\pi r^2$

Rectangular Prisms:

Volume: $V = lwh$

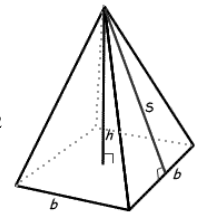
Surface Area: $SA = 2lw + 2lh + 2wh$



Square Pyramids:

Volume: $V = \frac{1}{3}b^2 h$

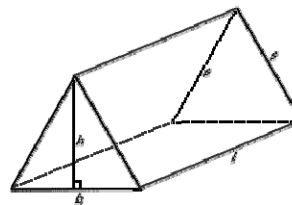
Surface Area: $SA = 2bs + b^2$



Isosceles Triangular Prism:

Volume: $V = (\frac{1}{2}bh)l$

Surface Area: $SA = bh + 2ls + lb$



Prism: (Any)

Volume: $V = Bh$ (B = area of one base)