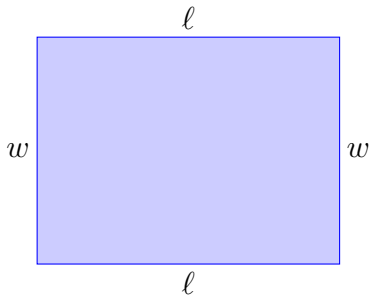
Geometric Formulas

Two-Dimensional Objects

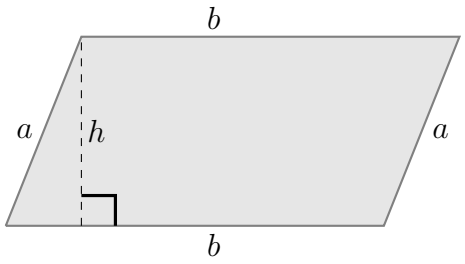
Rectangle/Square



$$P = 2\ell + 2w$$

$$A = \ell w$$

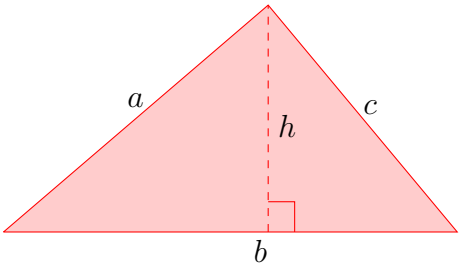
Parallelogram



$$P = 2a + 2b$$

$$A = bh$$

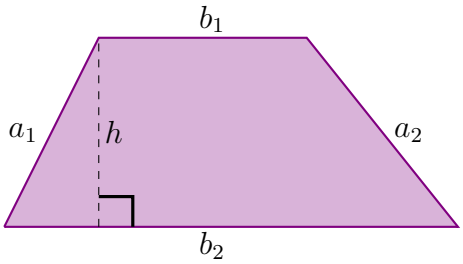
Triangle



$$P = a + b + c$$

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

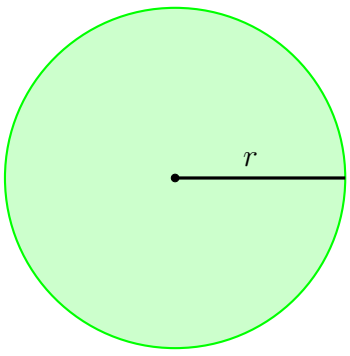
Trapezoid



$$P = a_1 + a_2 + b_1 + b_2$$

$$A = \frac{1}{2}h(b_1 + b_2)$$

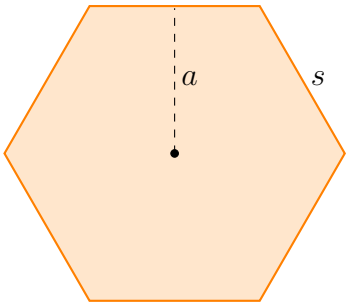
Circle



$$C = 2\pi r$$

$$A = \pi r^2$$

Regular Polygon



n= number of sides s=length of sides
a=apothem (the radius of inscribed circle)

$$P = ns \qquad A = \frac{1}{2}Pa$$

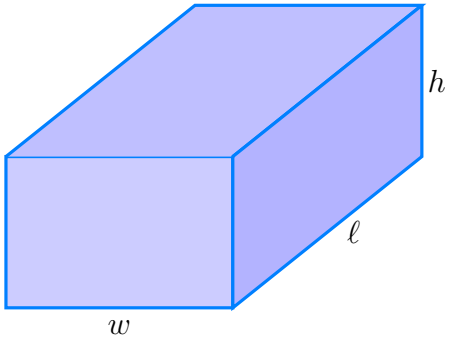
Sum of Interior Angles= $(n-2)\cdot 180°$

$$\text{Interior Angle} = \frac{(n-2)}{n}\cdot 180°$$

$$a = \frac{1}{2}s\cot\frac{180°}{n}$$

Three-Dimensional Objects

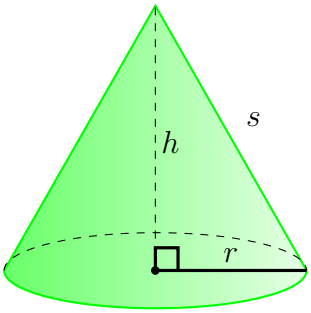
Rectangular Box/Cube



$$V = \ell w h$$

$$S.A. = 2\ell w + 2wh + 2\ell h$$

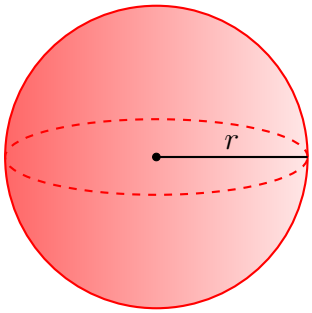
Cone



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

$$S.A. = \pi r^2 + \pi r s$$

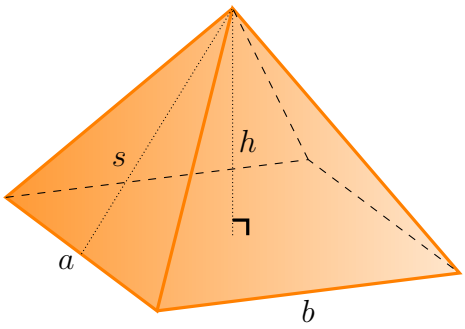
Sphere



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

$$S.A. = 4\pi r^2$$

Pyramid

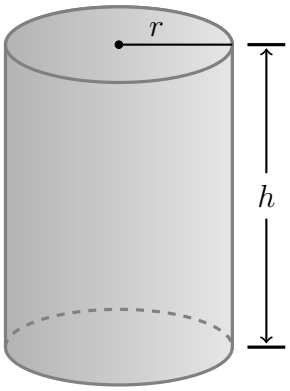


$B = ab$ (area of the base)
$s =$ height of the triangle face
$P = 2a + 2b$ (perimeter of the base)

$$V = \frac{1}{3}Bh$$

$$S.A. = \frac{1}{2}Ps + B$$

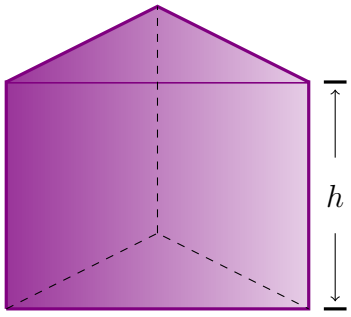
Cylinder



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

$$S.A. = 2\pi r^2 + 2\pi r h$$

Right Prism



$B =$ (area of the base)
$P =$ (perimeter of the base)

$$S.A. = 2B + Ph$$

$$V = Bh$$