

LEAP Math Formulas

GEOMETRY

Perimeter:

Triangle: $P = a + b + c$

Rectangle: $P = 2l + 2w$

Circumference of Circle: $C = 2\pi r$ or $C = \pi d$
(Exact measures, use π Approximate, use 3.14)

Area:

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

Rectangle: $A = lw$

Parallelogram: $A = bh$

Trapezoid: $A = \frac{1}{2}(b + B)h$

Circle: $A = \pi r^2$

Volume:

Rectangular Solid: $V = lwh$

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

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

Circular Cylinder: $V = \pi r^2 h$

Square-based Pyramid: $V = \frac{1}{3}s^2 h$

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

LINES

Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Standard Form: $Ax + By = C$

Slope-Intercept Form: $y = mx + b$

Function Notation: $f(x) = mx + b$

Point-Slope Formula: $y - y_1 = m(x - x_1)$

OTHER FORMS

Direct Variation: $y = kx$

Standard Form of a Quadratic: $ax^2 + bx + c = 0$

Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Vertex (Ordered Pair): $\left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right)\right)$

PERCENTAGES AND APPLICATION INFORMATION

Percent Increase / Decrease: $\frac{(\text{new number} - \text{original number})}{\text{original number}} \times 100$

Sales Tax: $\text{Tax} = \text{Rate} \cdot \text{Price}$

Total Price = Price + Tax

Commission: $\text{Commission} = \text{Rate} \cdot \text{Price}$

Total Commission = Price + Commission

Discount: $\text{Discount} = \text{Rate} \cdot \text{Price}$

Sales Price = Price - Discount

Simple Interest: $I = prt$ (time, yrs.)

Total Amount = Principal + Interest

Monthly Payments: $\text{Monthly Payment} = \frac{\text{Principal} + \text{Interest}}{\text{Total number of payments}}$

Distance: $d = rt$

Exponent Rule: $\sqrt[n]{a^m} = a^{\frac{m}{n}}$

Consecutive Integers: $x, x + 1, x + 2$

Consecutive Odd/Even Integers: $x, x + 2, x + 4$