Rearrange these Equations:

Rearrange the velocity formula $v_f{}^2 = v_i{}^2 + 2ad$ to

Solve for 'v_f'

Solve for 'd'

Solve for 'a'

Rearrange the formula $d = v_i t + \frac{1}{2}at^2$

Solve for 'a'

Solve for 'v_i'

Rearrange the formula $\frac{1}{2}mv_i{}^2 + mgh = \frac{1}{2}mv_f{}^2$

Solve for 'v_f'

Solve for 'h'

Rearrange the formula $d = \left(\frac{v_f + v_i}{2}\right)t$

Solve for 't'

Solve for 'v_f'

Rearrange the formula $\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$

Solve for 'f'

Solve for 'd_i'

Rearrange the formula $L = I_o\sqrt{L - \frac{v^2}{c^2}}$

Solve for 'L_o'

Solve for 'v'

Rearrange the formula $m = \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}}$

Solve for 'm_0'

Solve for 'v'

Substitution Challenges:

Rearrange the three variable formula $3y + 5x = 6z$ to solve for 'x'

If y = 20, and z = 5, then solve for x.

Use the formula $E = mgh$

If E = 1000, m = 20, and g = 10, then solve for 'h'.

Rearrange this energy formula $E = \frac{1}{2}mv^2$ to solve for 'v'

If m = 30, E = 400, then solve for v.

Given these equations, solve for d
if $v_i = 10$, $v_f = 15$, and $t = 4$.

$d = \bar{v}t$ $\qquad$ $\bar{v} = \frac{v_i + v_f}{2}$

Given these equations, solve for 'a'

if $F_A = 1500$, $g = 9.81, m = 15$, and $\mu = 2$.

$F_A - F_f = ma$ $\qquad$ $F_f = \mu F_N$ $\qquad$ $F_N = mg$

Given these equations, solve for d
if $v_i = 9$, $\mu = 2.5$, $g = 9.81$, $m = 15$, and $t = 4$.

$$d = v_i t + \frac{1}{2}at^2 \qquad -F_f = ma \qquad F_f = \mu F_N \qquad F_N = mg$$

Given these equations, solve for v_f
if $F = 800$, $m = 3$, $v_i = 9$ and $\Delta t = 15$.

$$\Delta p = F\Delta t \qquad \Delta p = m\Delta v \qquad \Delta v = v_f - v_i$$

Given these equations, solve for v
if $m = 150$, $g = 9.81$, $h = 10$ and $Q = 2500$.

$$E_i = E_f + Q \qquad E_i = E_p \qquad E_f = E_k$$

$$E_p = mgh \qquad E_k = \frac{1}{2}mv^2$$

Given these equations, solve for a
if $F_T = 1600$, $d = 20$, *and* $v_f = 14$, $m = 4$, and $g = 9.81$.

$$v_f{}^2 = v_i{}^2 + 2ad$$

$$F_g = mg \qquad v_i = 0$$