

Possibly useful relations:

$$\begin{array}{lll}
 \vec{A} = A_x \hat{i} + A_y \hat{j} + A_z \hat{k} & |\vec{A}| = \sqrt{A_x^2 + A_y^2 + A_z^2} & \\
 \vec{v}_{\text{avg}} = \frac{\Delta \vec{r}}{\Delta t} & \vec{v}(t) = \frac{d\vec{r}}{dt} & \vec{a}_{\text{avg}} = \frac{\Delta \vec{v}}{\Delta t} \\
 \vec{a}(t) = \frac{d\vec{v}}{dt} & \vec{v}_f = \vec{v}_i + \vec{a}t & v_{\text{avg}} = \frac{v_i + v_f}{2} \\
 x_f = x_i + v_i t + \frac{1}{2} a t^2 & \vec{r}_f = \vec{r}_i + \vec{v}_i t + \frac{1}{2} \vec{a} t^2 & x_f = x_i + v_{\text{avg}} t \\
 v_f^2 = v_i^2 + 2a \Delta x & & a_c = \frac{v^2}{r} \\
 v = \frac{2\pi r}{T} & v = r\omega & \omega = \frac{2\pi}{T} \\
 \vec{v}_{AB} = \vec{v}_{AC} + \vec{v}_{CB} & \Sigma \vec{F} = m\vec{a} & \vec{F}_{AB} = -\vec{F}_{BA} \\
 \vec{W} = m\vec{g} & f_s \leq \mu_s N & f_K = \mu_K N \\
 W = F \Delta x & W = \vec{F} \cdot \Delta \vec{r} & W = \int \vec{F} \cdot d\vec{r} \\
 W = \Delta K & K = \frac{1}{2} m v^2 & \Delta U = -W \\
 \vec{A} \cdot \vec{B} = AB \cos \theta = A_x B_x + A_y B_y + A_z B_z & & F_x = -\frac{dU}{dx} \\
 F = -kx & & \\
 U = mgy + U_0 & U = \frac{1}{2} kx^2 + U_0 & K_i + U_i = K_f + U_f \\
 \Delta U + \Delta K + \Delta E_{\text{int}} = W^{\text{ext}} & \Delta E_{\text{int}} = f_K d & E_{\text{total}}^{\text{isolated}} = \text{const.} \\
 P = \frac{dE}{dt} & P = \frac{dW}{dt} & P = \vec{F} \cdot \vec{v} \\
 \vec{p} = m\vec{v} & \vec{F} = \frac{d\vec{p}}{dt} & \vec{p}_{\text{total}} = \text{const.} \\
 \vec{I} = \Delta \vec{p} = \int \vec{F} dt = \vec{F}_{\text{av}} \Delta t & \vec{r}_{\text{cm}} = \frac{1}{M} \Sigma \vec{r}_i m_i & \vec{r}_{\text{cm}} = \frac{1}{M} \int \vec{r} dm \\
 \Sigma \vec{F}_{\text{ext}} = M \vec{a}_{\text{cm}} & M \vec{v}_{\text{cm}} = \vec{p}_{\text{total}} & \\
 \cos \theta = \text{adj./hypo.} & \sin \theta = \text{opp./hypo.} & \tan \theta = \frac{\sin \theta}{\cos \theta} \\
 x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} & g = 9.8 \text{ m/s}^2 \text{ downward} &
 \end{array}$$