PHYS I Final Exam Equation Sheet

$v = v_0 + at$

$v^2 = v_0^2 + 2a(x - x_0)$

$x - x_0 = v_0t + \frac{1}{2}at^2$

$\Delta U = Q - W$

$P = IV$

$y - y_0 = x\tan\theta - \frac{x^2 g}{\left[2\left(v_0\cos\theta\right)^2\right]}$

$Q = mL$

$V = IR$

$\cos\theta = \frac{adjacent}{hyp}$

$\sin\theta = \frac{opposite}{hyp}$

$\tan\theta = \frac{opposite}{adjacent}$

$\boldsymbol{F}_f = \mu\boldsymbol{N}$

$Q = mc\Delta T$

$\rho = \frac{m}{v}$

$\boldsymbol{F} = m\boldsymbol{a}$

$v = \lambda f$

$\lambda = \frac{2\ell}{n}$

$\omega = 2\pi f = \frac{v}{R}$

$f = \frac{1}{T} = \frac{1}{2\pi}\sqrt{\frac{k}{m}}$

$v = \frac{2\ell f}{n}$

$R = \frac{v_0^2 \sin 2\theta}{g}$

$\deg \times 2\pi/360^0 = \text{rad}$

$v = \sqrt{\frac{F}{\mu}}$

$W_{nc} = E_f - E_i$

$K.E. = \frac{1}{2}mv^2$

$P.E._{(grav)} = mgh$

$W = F \times s = \Delta KE = \Delta PE$

$\Delta KE + \Delta PE = 0$

$\boldsymbol{p} = m\boldsymbol{v}$

$v_0 = \frac{(m+M)}{m}\sqrt{2gh}$