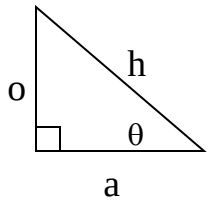
Physics 121 Formulas

$\sin \theta = o/h$
$\cos \theta = a/h$
$\tan \theta = o/a$



$o^2 + a^2 = h^2$

Kinematics

$v = \Delta x/\Delta t$ (constant velocity)
$a = \Delta v/\Delta t$ (constant acceleration)
$\Delta x = v_o t + \frac{1}{2} a t^2$
$v_f^2 = v_o^2 + 2 a \Delta x$

Dynamics

$F_{net}=ma$
$F_g=Gm_1m_2/r^2$
$F_g = mg$ (near surface of earth)
$F_{\mu s} \leq \mu_s F_N$
$F_{\mu k} = \mu_k F_N$
$F_{spring} = -k \Delta x$

Constants

$G = 6.67 \times 10^{-11}\ N*m^2/kg^2$
$M_E = 5.98 \times 10^{24}\ kg$
$R_E = 6.38 \times 10^{6}\ m$