Quiz for Physics 131 on Thursday, 17 June 2010.
Name_____

I will grade all eight (8) problems. Your grade will be based on the "best seven (7)". There is extra paper on the front table.

$v_{xf} = v_{xi} + a_x t$

$x_f - x_i = v_x t = (1/2)(v_{xi} + v_{xf})\, t$

$x_f - x_i = v_{xi} t + (1/2) a_x t^2$

$v_{xf}^2 = v_{xi}^2 + 2 a_x (x_f - x_i)$

$\omega_f = \omega_i + \alpha t$

$\theta_f - \theta_i = \omega t = (1/2)(\omega_i + \omega_f)\, t$

$\theta_f = \theta_i + \omega_i t + (1/2)\, \alpha\, t^2$

$\omega_f^2 = \omega_i^2 + 2\alpha(\theta_f - \theta_i)$

Conservation of angular momentum: $I\, \omega_f = I\, \omega_i$

$I = \Sigma\, m_i\, r_i^2$, and remember, moments of inertia <u>ADD</u>

$F_{friction} = \mu\, F_{normal}$

$F_{spring} = -kx$

$PE_{spring} = \frac{1}{2}\, kx^2$

Work = Force * distance

$F = G\, m\, M / r^2$, $G = 6.67 \times 10^{-11}\ N\ m^2 / kg^2$

Moon mass = $7.4 \times 10^{+22}$ kg

Moon radius = 1750 km

$$a_c = v_T^2 / r = r\ \omega^2$$