

PHY 101 Mid-term Exam 2
Thursday 26 October 2006

$$KE = \frac{1}{2} mv^2.$$

$$GPE = mgh.$$

$$Elast. PE = \frac{1}{2} kx^2.$$

$$W = F_x * \Delta x .$$

$$W_{total} = \Delta KE$$

$$W_{external} = \Delta PE$$

$$P = \frac{\Delta E}{\Delta t}.$$

$$F_{grav} = mg \text{ near the Earth's surface}$$

$$F_{grav} = G \frac{m_1 m_2}{r^2} \text{ in general, where } G = 6.67 \cdot 10^{-11} \text{ m}^3/\text{kg}\cdot\text{sec}^2$$

$$F_{spring} = kx.$$

$$F_{elect} = k_e \frac{q_1 q_2}{r^2}, \text{ where } k_e = 8.99 \cdot 10^9 \text{ N m}^2/\text{C}^2 .$$

$$F_{elect} = qE.$$

$$Q = CV$$

$$P_{elect} = V * I.$$

$$V = I * R.$$

$$\Phi = NBA$$

$$V_{induced} = \Delta\Phi/\Delta t$$

$$Elect. PE = \frac{1}{2} CV^2.$$

Electrochemical Energy stored in battery = Voltage * Capacity

$$H + W = \Delta E.$$

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

$$T = \frac{1}{f}$$