

Unit 5 Chapter 13 Homework #5

$$67) m = 3 \text{ kg}$$

$$\Delta x = .1 \text{ m}$$

$$A) mgh = \frac{1}{2} kx^2$$

$$3(10)(.1) = \frac{1}{2}(k)(.1)^2$$

$$k = 600 \text{ N/m}$$

$$B) mgh = \frac{1}{2} kx^2 + \frac{1}{2} mV^2 + mgh$$

$$3(10)(.1) = \frac{1}{2}(600)(.05)^2 + \frac{1}{2}(3)V^2 + 3(10)(.05)$$

$$V^2 = .75$$

$$V = .87 \text{ m/s}$$