Cole Gibson

Question 9

$F = -kx$

$\frac{1}{2}kx^2 = \frac{1}{2}mv^2$ Compressed .011 m

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Ball travels $2.2 - .27 = 1.93$ m

$\Delta x = v_1 \Delta t$

$\Delta y = v_1 \Delta t + \frac{1}{2}at^2$

$\frac{1}{2}kx^2 + mgh = mgh + \frac{1}{2}mv^2$

$F\Delta d - F\Delta d = \Delta K$

$F = -kx$

$10 = -k(.011)$

$k = 909$

$\frac{1}{2}kx^2 = \frac{1}{2}mv^2$

$\frac{1}{2}(909)(.011)^2 = \frac{1}{2}v^2$

$v = .33$ m/s

$2.2 = .33t + \frac{1}{2}(-9.8)t^2$

$t = .7$

$1.93 = .7v$

$v = 2.75$

$\frac{1}{2}kx^2 = \frac{1}{2}mv^2$

$\frac{1}{2}(909)(x)^2 = \frac{1}{2}(2.75)^2$

$x = 1.22$ cm