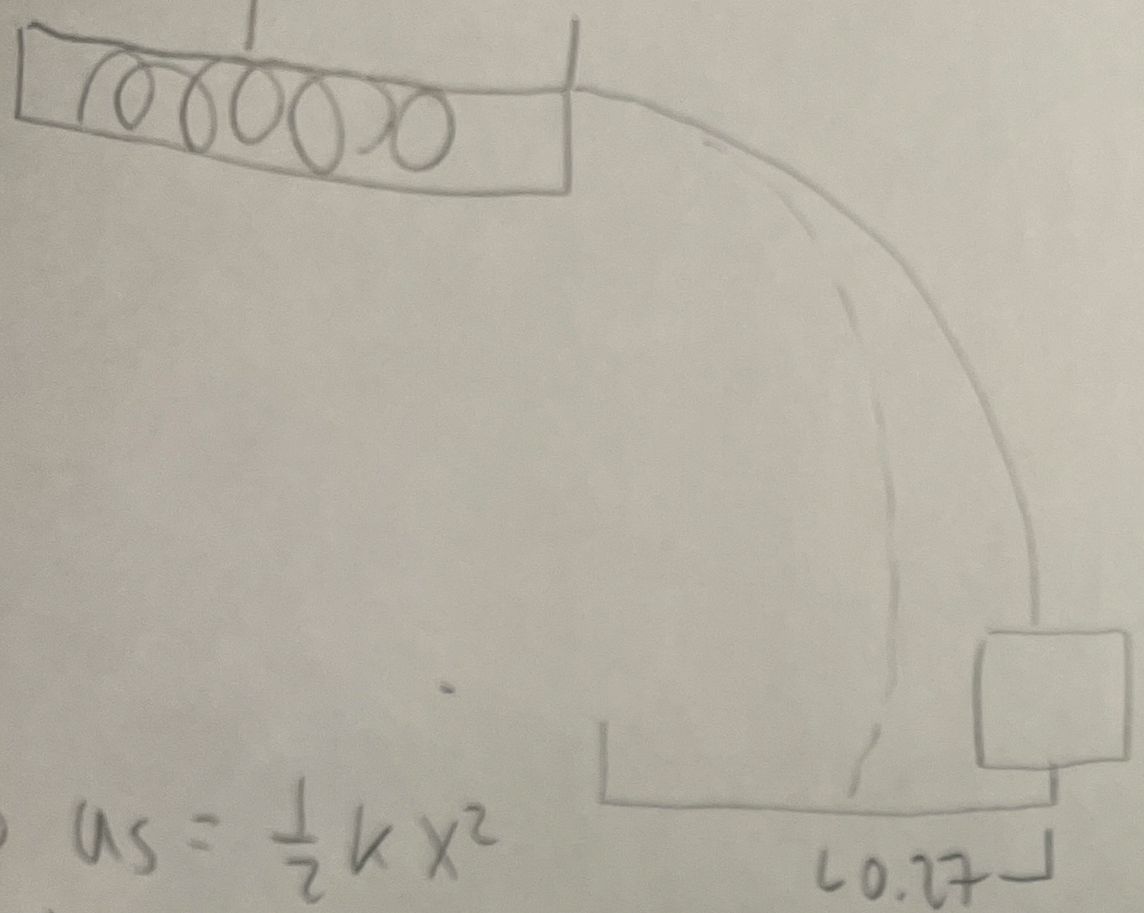
9) All EPE→KE
(1)

All PE → KE
(2)



CHLOE OH

Student Life Disability Ser
098 Baker Hall
113 West 12th Ave.
Columbus, OH 43210

2.2 − .27 = 1.93 m

(1) $U_S = \frac{1}{2}kx^2$

$\frac{1}{2}k(0.01)^2 = \frac{1}{2}mv^2 \rightarrow 0.27$

example: $k = 700$, $m = 1$, $h = 2m$

$\frac{1}{2}(700)(0.01)^2 = \frac{1}{2}(1)v^2$

$v^2 = 0.07$

$v_x = 0.264\,m$

$\frac{1.93\,m}{0.264\,m/s} = 7.295$ ↑ fall time

$\frac{2.2}{x} = 7.295$

$x = .3015\,m/s$ ← needed speed

$\frac{1}{2}k(\Delta x)^2 = \frac{1}{2}mv^2$

$\frac{1}{2}(700)(\Delta x)^2 = \frac{1}{2}(1)(.3015)^2$

$\Delta x^2 = .000\,1727$

$\Delta x = 1.3\,cm$