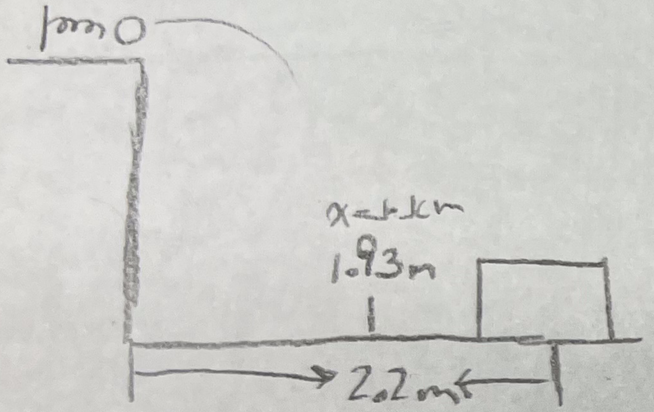
9) $g = 10 m/s^2$



$x = v_i t + \frac{1}{2} a t^2$

$2.2 = v_i t$

$\frac{1.1\,cm}{x\,cm} = \frac{1.93\,cm}{220\,cm}$

$242 = 193 \times 120$

$x = 1.253$

$x = 1.254$

Rhonda must compress it

1.254 cm

$U_S = K_E + U_g$

$\frac{1}{2} k x^2 = \frac{1}{2} m v^2 + \frac{1}{2} m g h$

$\frac{1}{2}(20)(1.1)^2 = \frac{1}{2} v^2$

10) $R = .2m$ $m = 2kg$ $g = 10\ m/s^2$ $I = (1/2)MR^2$