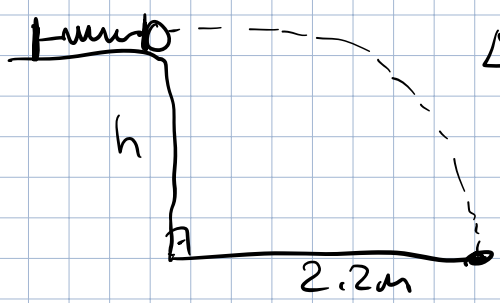
#9

$\Delta x_B = 1.1 \times 10^{-2}\ m \rightarrow$ Spring

$\Delta x_B = 1.93\ m \rightarrow$ Floor




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

$h = \frac{1}{2}gt^2$

$\frac{1}{2}k \cdot x^2 = \frac{1}{2}mv^2 \rightarrow v = \sqrt{\frac{kx^2}{m}}$

$1.93 = v \cdot t = \sqrt{\frac{k \cdot (1.1\times10^{-2})^2}{m}} \cdot t = 1.93$

$\sqrt{\frac{k \cdot x^2}{m}} \cdot t = 2.2$

squared

$\frac{k \cdot (1.1\times10^{-2})^2}{m} = (1.93)^2$

$\frac{k \cdot x^2}{m} = (2.2)^2$

$\rightarrow x = ?$

$\rightarrow (1.1\times10^{-2})^2 \cdot (2.2)^2 = x^2 \cdot (1.93)^2$

$\rightarrow x = 0.01254\ m = \boxed{1.254\ cm}$