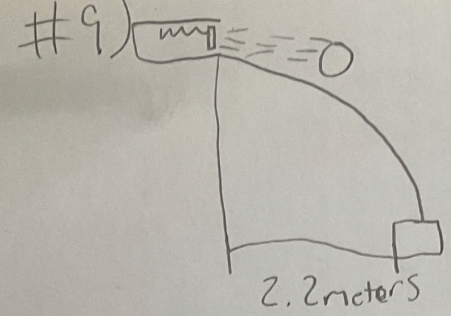
#9)




$\Delta x = 2.2m$

$Vf_x = 0 \quad V_i x = ?$

$Vf_y = 0$

$V_i y = 0$

$a_y = -10$

$d_1 = 2.2 - .27$

$d_1 = 1.93$

$d_2 = 2.2$

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

$\sqrt{\frac{kx^2}{m}} = V_i$

$y_2 \; V_i t + \frac{1}{2} g t^2$

$t = \sqrt{\frac{2x}{g}} \quad y = VT$

$d_1 = \sqrt{\frac{k x_i^2}{m}} \cdot \sqrt{\frac{2y}{g}} = \sqrt{\frac{k x_i^2}{m}} = d_1$

$d_2 = \sqrt{\frac{k x_{fc}}{m}} \sqrt{\frac{2y}{g}}$

$\frac{d_1^2 m}{x_1^2} = k \Rightarrow x_2 = \frac{d_2}{d_1} x_1 \Rightarrow x_2 = \left(\frac{2.2}{1.93}\right)(1.1cm) = \boxed{1.25cm \text{ or } 0.0125m}$