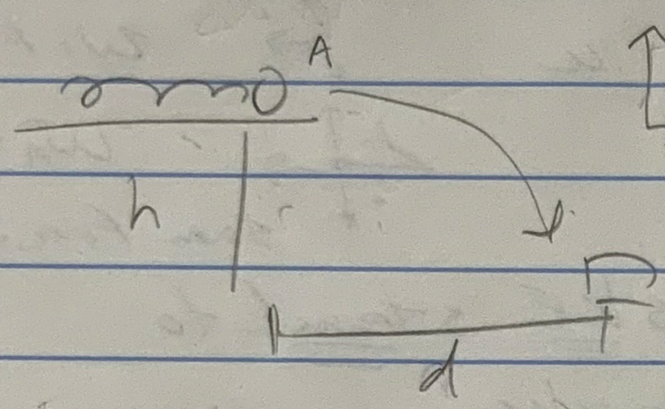
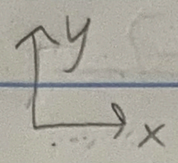
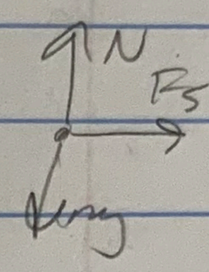
9. $x_c = .011 \rightarrow \Delta x = 1.93m$ $g = 10 m/s$





$d = 2.2m$



$v_{xi} = v_x$

$a_y = -g = -10 m/s$

$v_x = v_{xi}$

$v = \frac{\Delta x}{\Delta t} \rightarrow \Delta t = \frac{\Delta x}{v} = ?$

top of A

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

$\sqrt{\frac{kx_c^2}{m}} = v$

$\Delta x = v_x t$

$\Delta t = \sqrt{\frac{\Delta x}{\sqrt{\frac{kx_c^2}{m}}}}$

$mgh = \frac{1}{2}mv_y^2$

$-\sqrt{2gh} = v_y = g\Delta t$

$\Sigma F \rightarrow F_s = ma$

$kx_c = ma$

$\Delta t = \frac{\Delta x}{\sqrt{\frac{max_c}{m}}} = \frac{\Delta x}{\sqrt{ax_c}}$

$\Delta x = 2.2m$

$\Delta y = \frac{1}{2}gt^2$

$\sqrt{2\Delta y/g} = t$