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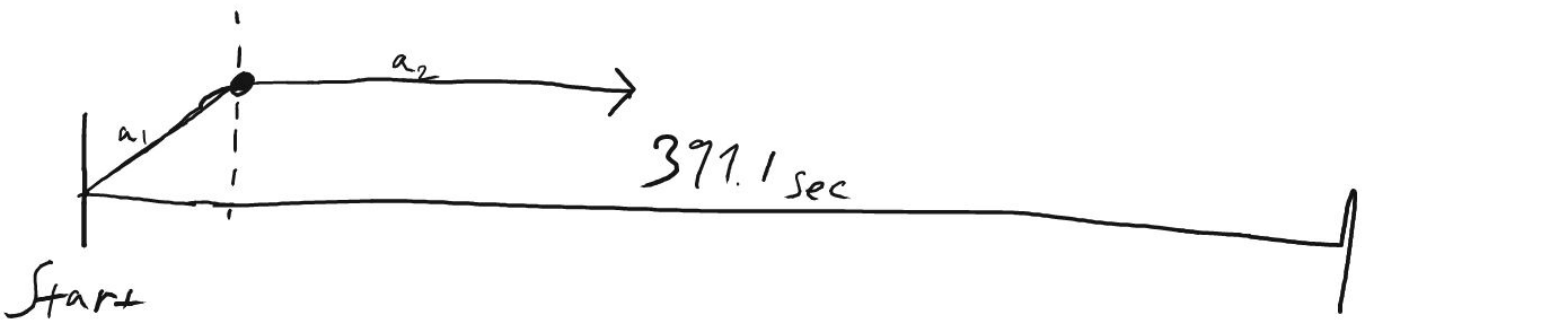
Problem 1



$a_1 = 3.23 ft/s^2$ a_2

$V_1 = 16.73 ft/s$ V_{max}

$t = ?$ $S_1 = S_0 + V_0 t + \frac{1}{2} a t^2$

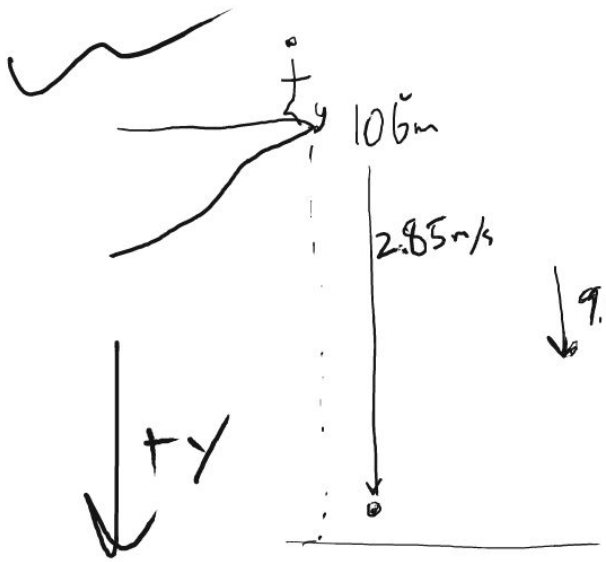
$\left(\frac{V_1 - V_0}{t_1 - t_0}\right)(\Delta t)^2$

$S_1 = \frac{1}{2} 6.4 = \frac{1}{2}(\Delta t)(\Delta V) = \frac{1}{2}(t_1 - t_0)(V_1 - V_0)$

$\frac{S_{tot}}{1} = \frac{1.25 \mid 5280 ft}{1 \mid n_i}$

$= 6600 ft$

$t_i = ? \Rightarrow \frac{V_1 - V_0}{a} = \frac{at}{a}$



$\Delta y = 106m$

$V_0 = 2.85 m/s$

$V_f = ?$

$t = ?$

$a = g = 9.81 m/s$

$9.8 m/s^2$

1.) time

$$\Delta y = V_0 t + \frac{1}{2} g t^2$$

$$\frac{1}{2} g t^2 + V_0 t - \Delta y = 0$$

$$t = \frac{V_0 \pm \sqrt{V_0^2 - 4(\frac{1}{2}g)(-\Delta y)}}{(2(\frac{1}{2}g))} = 4.37 sec$$

2.) V_f

$V_f = V_0 + gt$

$VF = (2.85) + g(4.37)$

$Vf = 45.7 m/s$