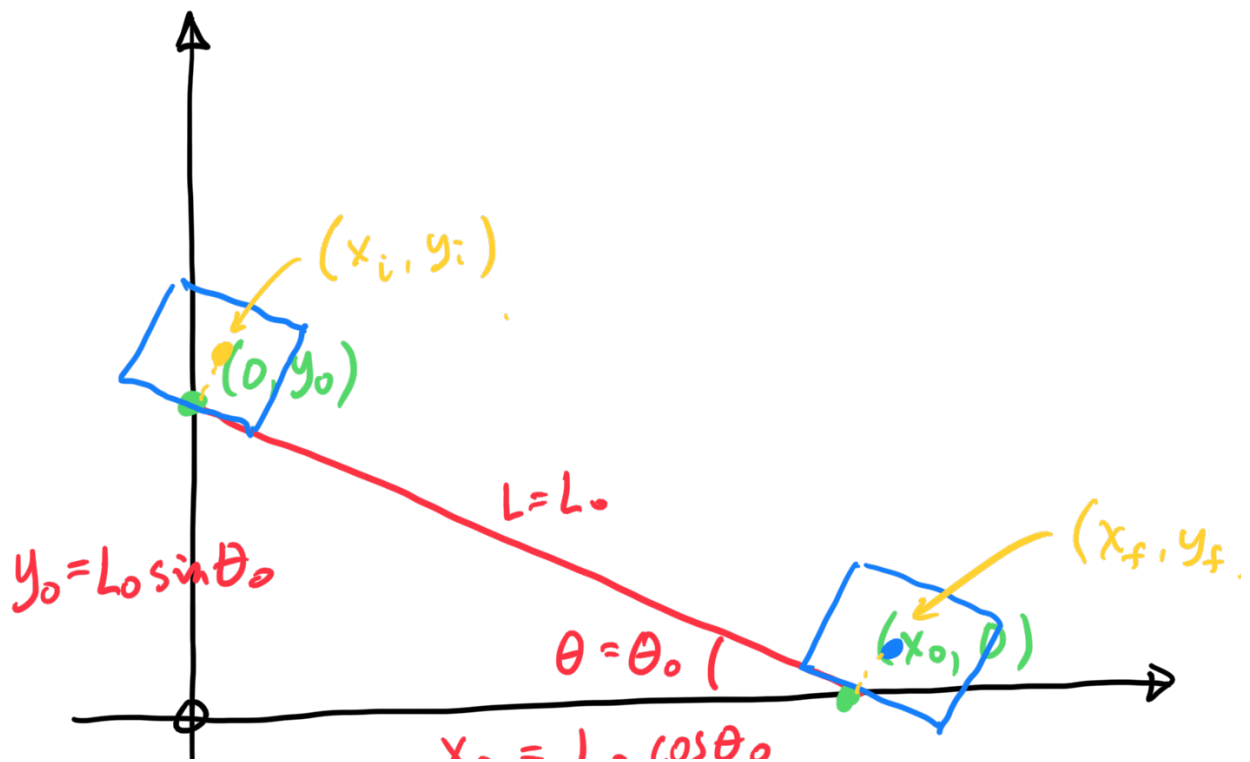


Assignment 5 - Question 3

- ① Assume the slope is 2m long.
- ② Assume the package starts at $x=0$, and ends at $y=0$.
- ③ Assume that the box is "square" -
10 cm \times 10 cm.
 x_B y_B $L_0 = 2\text{m}$
 $\theta_0 = 10.7^\circ$

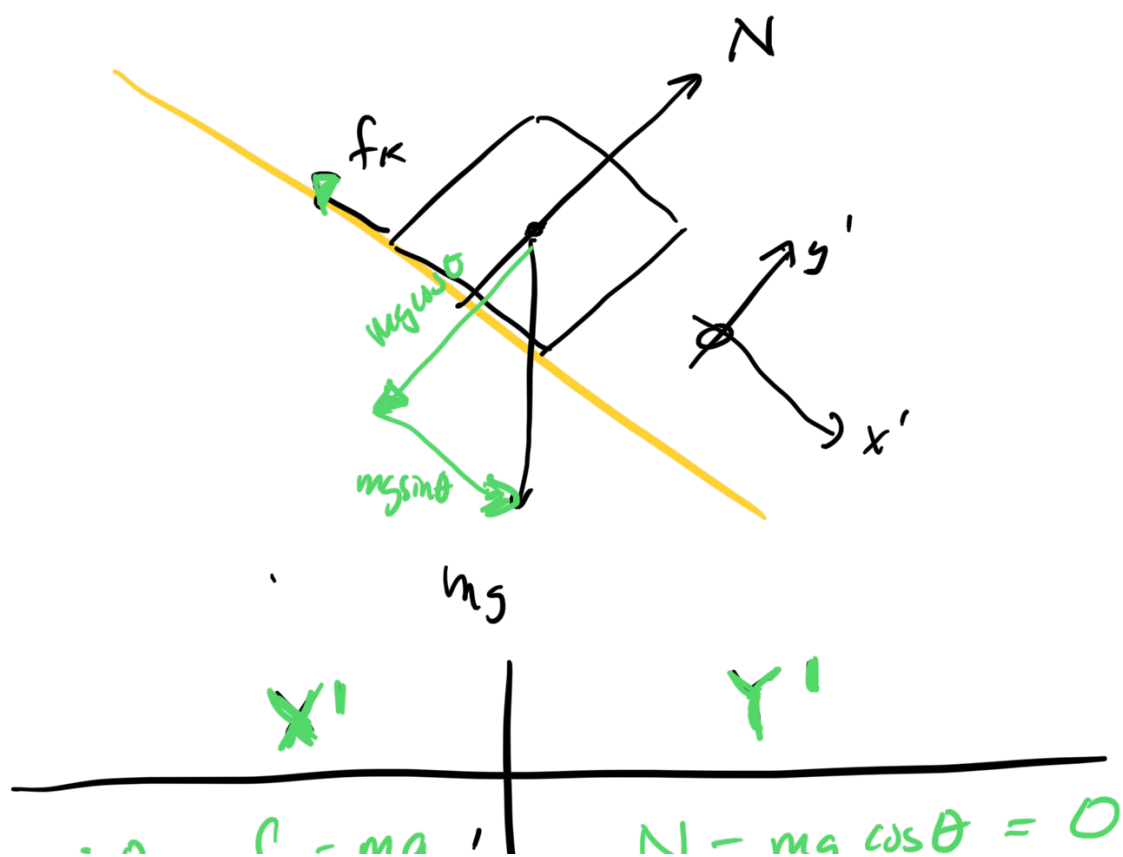


$$x_i = \left(\frac{y_B}{2}\right) \sin \theta_0$$

$$y_i = y_0 + \left(\frac{y_B}{2}\right) \cos \theta_0$$

$$x_f = x_0 + \left(\frac{y_B}{2}\right) \sin \theta_0$$

$$y_f = \left(\frac{y_B}{2}\right) \cos \theta_0$$



$$mg \sin \theta - f = ma_x$$

$$\cancel{mg} \sin \theta - \mu_k \cancel{mg} \cos \theta = ma_x'$$

$$a_{x'} = g \sin \theta - \mu_k g \cos \theta$$

$$a_{x'} = g (\sin \theta - \mu_k \cos \theta)$$

$$N = mg \cos \theta$$

$$f_k = \mu_k N$$

$$= \mu_k mg \cos \theta$$

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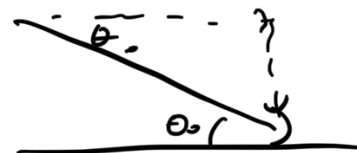
OmniPod Dash → U.S. Medical Supply

Byram Medical → Dexcom G6

Igenio RX → Insulin.

$$a_x = a_{x'} \cos \theta$$

$$a_y = -a_{x'} \sin \theta$$



$$v_{ix} = 0$$

$$v_{fx} = 0$$

$$\Delta x = \cancel{v_{ix} t} + \frac{1}{2} a_x t^2 = \frac{1}{2} a_x t^2$$

$$\Delta y = \cancel{v_{iy} t} + \frac{1}{2} a_y t^2 = \frac{1}{2} a_y t^2$$

$$\Delta x$$

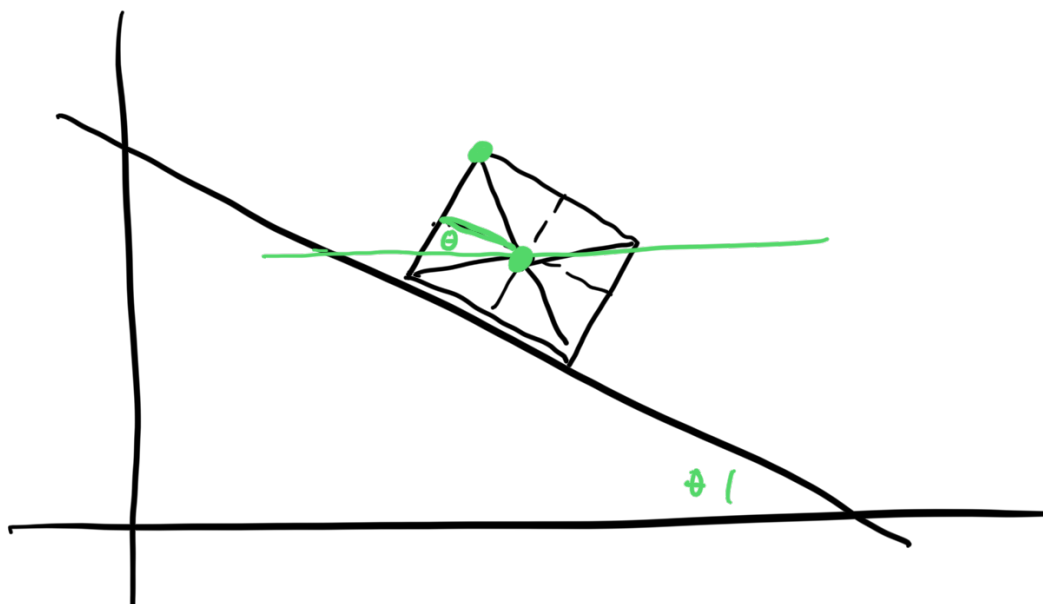
$$v_i$$

$$a$$

$$t$$

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

$$\sqrt{\frac{2 \cdot \Delta x}{a}}$$



J