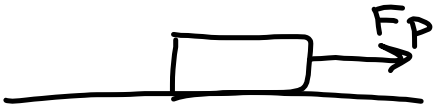
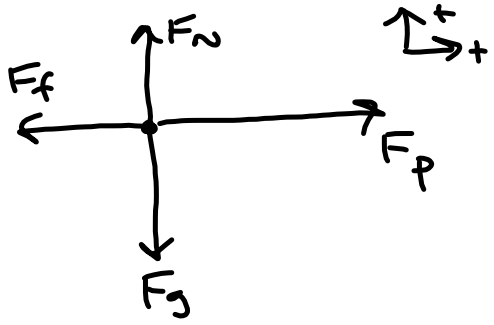
Lab - Friction when Pulling Box

- Determine the force of friction when the block is accelerating.



- Whiteboard:
  - Data
  - FBD
  - Calculations

- If finish quickly, find the coeffient of kinetic friction between the block and the table.



$$\sum \bar{F}_x = m\bar{a}_x$$

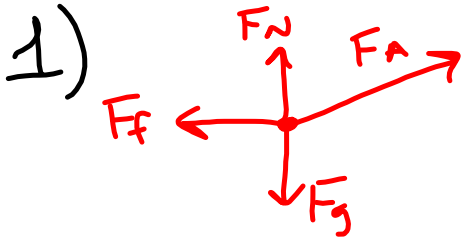
$$F_p - F_f = ma_x$$

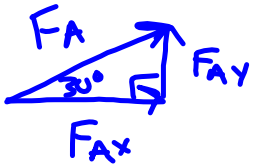
$$F_f = F_p - ma_x$$

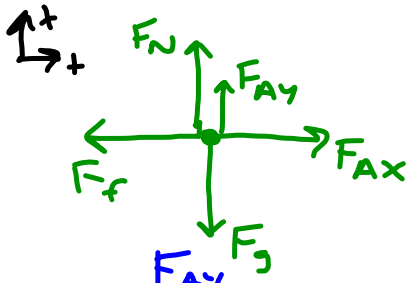
$$\mu = \frac{F_f}{F_N}$$

PS #7

1)







$$\sin(30°) = \frac{F_{AY}}{F_A}$$

$$F_{AY} = F_A \sin(30°)$$

$$= 41.8\,N$$

$$\cos(30°) = \frac{F_{AX}}{F_A}$$

$$F_{AX} = F_A \cos(30°)$$

$$= 73.3\,N$$

$$\Sigma F_y = \emptyset$$

$$F_N + F_{AY} - F_g = \emptyset$$

$$F_N = F_g - F_{AY}$$

$$= mg_g - F_{AY}$$

$$= (15\,kg)(9.8\,m/s^2) - 41.8\,N$$

$$= 105.2\,N$$

$$\mu = \frac{F_f}{F_N}$$

$$= \frac{73.3\,N}{105.2\,N}$$

$$= 0.697$$

$$\Sigma F_x = \emptyset$$

$$F_{AX} - F_f = \emptyset$$

$$F_f = F_{AX}$$

$$= 73.3\,N$$