

Lab - Friction

1) Single Box

change mass

measure force it takes
to start box in motion

• Whiteboard:

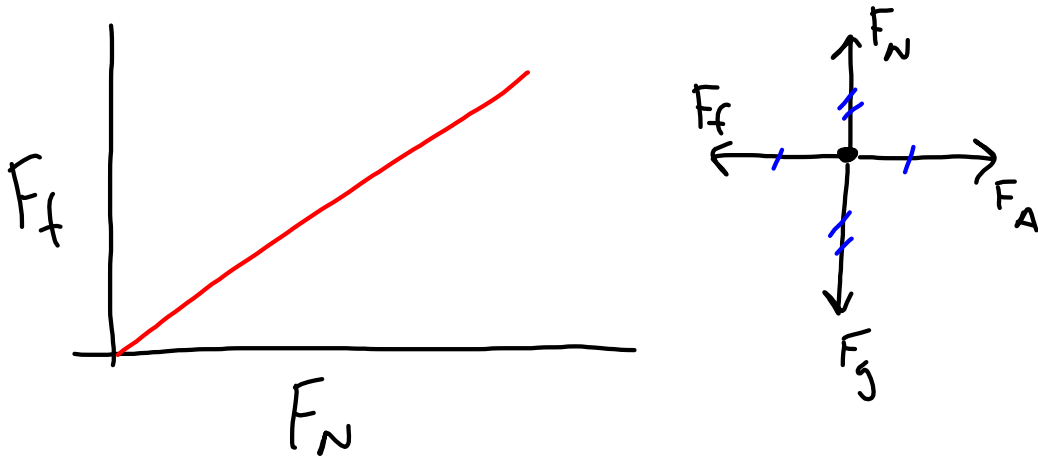
- Data

- Graph → function of best fit, interpretation

2) Multiple Boxes

change surface area

measure force it takes
to start box in motion



$$\mu \equiv \frac{F_f}{F_N} \rightarrow \text{force of friction}$$

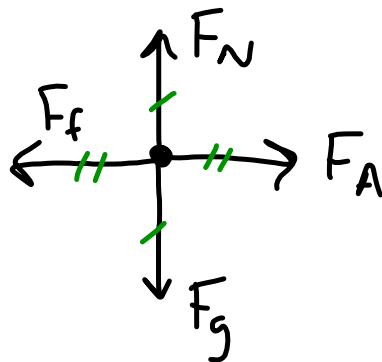
$$\mu \equiv \frac{F_f}{F_N} \rightarrow \text{normal force}$$

coefficient
of friction
(Greek lowercase "mu")

- No relationship between the surface area and force of friction
- No first-order relationship between velocity and force of friction
- Two "types" of coefficient of friction
 - μ_s - Static \rightarrow object not moving ($\bar{v} = 0 \text{ m/s}$)
 - μ_k - Kinetic \rightarrow object is moving

Worksheet 5

1) a.



b.

$$\begin{aligned} \mu &= \frac{F_f}{F_N} \\ &= \frac{50\text{N}}{300\text{N}} \\ &= .17 \end{aligned}$$

$$\sum \vec{F}_x = \emptyset$$

$$F_f = F_A = 50\text{N}$$

$$\sum \vec{F}_y = \emptyset$$

$$F_N = F_g = 300\text{N}$$