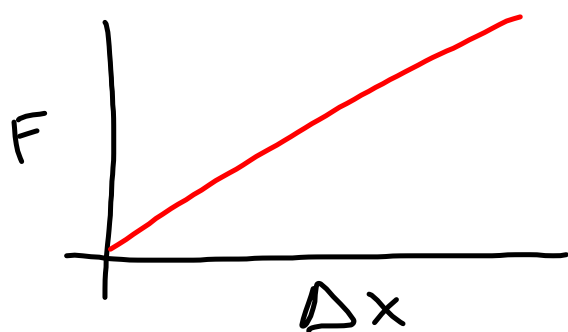


Lab - Hooke's Law

- Determine the relationship between force and stretching displacement.
- Whiteboard: 3 springs, 5 measurements for each spring
 - Data → force and displacement
 - Graph → Force versus displacement
 - Function of best fit for each → write function



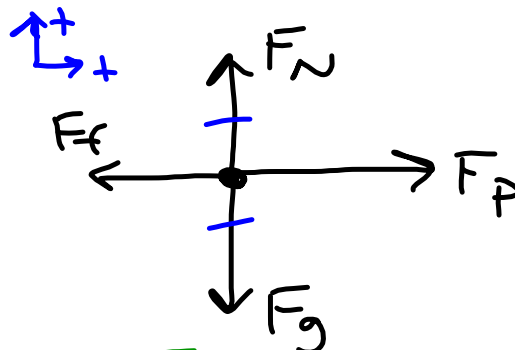
$$\text{slope} = \frac{F}{\Delta x}$$

$$\text{Spring constant} = \frac{F}{\Delta x}$$

(k)

$$F_s = -k \Delta x$$

Worksheet 5



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

$$F_p - F_f = ma_x$$

$$a_x = \frac{F_p - F_f}{m}$$

$$= \frac{100 \text{ N} - 73.5 \text{ N}}{50 \text{ kg}}$$

$$= 0.53 \text{ m/s}^2$$

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

$$F_N = F_g = mg = (50 \text{ kg})(9.8 \text{ m/s}^2) = 490 \text{ N}$$

$$F_f = \mu F_N$$

$$= (0.15)(490 \text{ N})$$

$$= 73.5 \text{ N}$$