

Chapter 4 - Weight + Friction

Weight (force of gravity)  $\vec{F}_g = m\vec{g}$

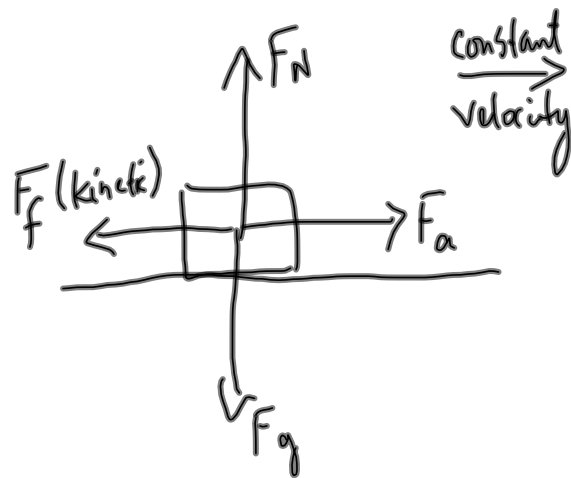
near the Earth's Surface  $\vec{g} = 9.81 \text{ m/s}^2$  [down]

friction

kinetic - moving

static - try to start moving

$$F_f = \mu F_N$$



Vertically (no motion)

$$F_N = F_g$$

Horizontally (constant <sup>kinetic</sup> velocity or just starting to move <sup>static</sup>)

$$F_a = F_f$$

## Chapter 5 - Newton's Laws

1. Law of Inertia

2.  $\vec{F}_{\text{net}} = m\vec{a}$

- FBDs are VERY IMPRT!!

- don't forget your kinematics.

(you must be able to work comfortably with  $a, \Delta d, v_1, v_2, \Delta t$ )

3. Action-Reaction

- Towing Problems

- Apparent ("Feels Like") weight.

Do not worry about: ① Forces + Angles  
p 168-176 + p 189-194

② §5-4 (Impulse + Momentum)