

Forces Unit - Review

Main ideas

Gravity $F_g = Gm_1m_2/d^2$

on earth: $F_g = mg$ g = gravitational intensity = 9.8 N/kg on earth only

- Friction μ_k and μ_s formulas $\mu = F_f/F_n$
- Free Body Diagrams - be able to draw accurately and analyze
 - be able to use to solve collinear (1D) and non-collinear (2D) problems
- Newton's 3 laws - know and be able to explain & solve problems
- Newton's 2nd law + kinematics
 - ie: Be able to solve using both $F_{net} = ma$ and kinematics formulas

Key vocabulary - Look at p. 152 for a list and associated pages if you need to review.
This is not an exhaustive list, but it is nice of the textbook to list! ;)

Gravity - be able to use Newton's Universal Law of Gravity.

- mass vs. weight - what is the difference? - units for each? - which can change by going to the moon? Why?
- p 199 # 1, 12, 14, 20 to solve: p. 157 # 50, 48

Friction - p 198 # 7,8,9, 11, 30, 32 to solve: p. 211 #50, 54

Newton's laws + FBD's to solve: p. 157 # 51, 52, 54, 55

Newton's laws + kinematics to solve: p. 200 # 34, 36

Application

car aerodynamics - use the Mazda video on web (seen in class) to identify how car engineers reduced air resistance (drag) and WHY they would (discussed in class)