Test—PreAP—Tues Nov 1
Reg—Wed. Nov 2

PreAP: due Fri., Oct 28 (Assigned: Wed., Oct 26)
Reg: due Wed., Nov 2 (Assigned: Mon., Oct 31)

Test Review 2

1. Are the following true or false?
   A. __ A net force can cause an object at rest to stay at rest.
   B. __ A force can causes an object to speed up.
   C. __ It takes a force to change an object's direction.
   D. __ A pickup truck accelerates from a stop. An object in the bed of the truck moves backwards.
   E.___ Your mass changes when you are in space.
   F.___ A fast baseball has the same inertia as a baseball at rest.
   G. __ Gravity pulls a car down a hill as hard as friction pulls up the hill. The car is at rest.
   H. __ With the same force a more massive object will feel less acceleration than a less massive object .
   I. ___ You leg pushes backwards and you move forward. It is your leg that causes your forward motion.
   J. ___ Because a car is moving, its tires experience static friction against the road.
   K. __ You weight would be less on the moon.
   L.___ A force acts on a stationary object. It must move.

2. Why does a person climbing a rope pull down on the rope to move up?

3. A 240 N object is accelerating 8 m/s^2. Find the net force on the object.

4. Which is a rougher surface: surface A ($\mu_s = .3$; $\mu_k = .14$); surface B ($\mu_s = .71$; $\mu_k = .42$)?

5. A 35 kg object is near a 150 kg object. What force do they feel between each other?

6. An 10 kg object is on a 40^o ramp. ($\mu_s = .3$; $\mu_k = .14$). Tell me what happens (include the diagram).

7. A 8 kg object feels a 45 N force pulling at 40^o N of E and a 8 N force pulling North. Find the net force, acceleration, and equilibrium force for the object.

8. 5 kg object sits on a table with $\mu_s = 0.65$ and $\mu_k = 0.25$. If a 30 N force pulls up and to the left at 30^o
   A. Will it move?
   B. If not, what F_{add} is needed?
   C. If so, find "a".

9. Which of Newton's Laws applies to the following:
   A. ____ The spinning flask demo (Hero's engine) I showed in class spinned faster when I turned up the burner.
   B. ____ The water in the flask kept moving for awhile when the flask stopped.
   C. ____ The flask moved clockwise because water shot out of the flask shoots counterclockwise.

10. What question do you ask to tell if something has undergone a physical or chemical change?

11. Determine if the following are physical (P) or chemical (C) changes:
    A. __ A solid is put into a liquid and the mixture gets warm.
    B. __ Sugar is dissolved into water to make sugar water.
    C. __ To get the above sugar back, you boil off the water.
    D. __ Paper is ripped up into pieces.
    E. __ Silver oxidizes over time and tarnishes.