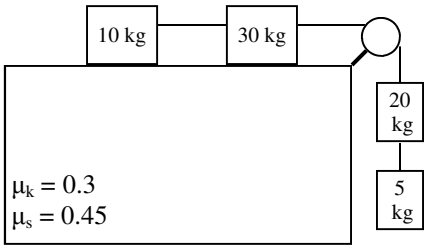
A-Day: Due Wed., Oct 22 (Assigned: 10/20)
B-Day: Due Thurs., Oct 23 (Assigned: 10/21)

2008 PreAP Forces 4

1. Find the acceleration of the system at the right, if it does move, of course.



2. What are Newton's Three Laws of Motion

3. A hammer hits a nail with 2,000 N of force, causing the nail to be pushed into a piece of wood. Is the force of the nail on the hammer greater or less than that of the hammer on the nail?

4. A 300 N block is moving 12 m/s. It comes to rest after 3.8 seconds.
   A. What is the mass of the object?

   B. How far does the block slide to come to rest?

   C. Find the coefficient of kinetic friction for the surface.

   D. If the mass of the block were doubled, with the same coefficient of friction, how far does it slide before coming to rest?

5. When you drop a 2 kg object in a vacuum what is the net force acting on it?

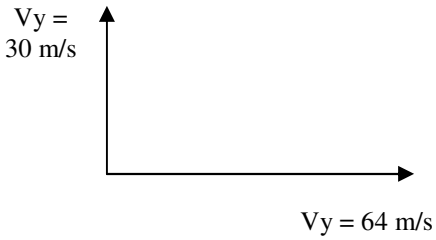
6. A loaf of bread weighs 5.30 N on Earth.
   A. What is its mass here on the Earth?

   B. What would it weigh, in newtons, on Mars, where the acceleration due to gravity is 0.378 times that on Earth?

   C. What is the mass of the object on Mars?

7. A 10 kg and 30 kg object are dropped.
   A. How does the acceleration of the objects compare?

   B. How does the force on the two objects compare?



8. A. If the two arrows at the right show the initial x and y velocities of a projectile, what is the initial velocity of the projectile?

   B. How much time does it take to get back to the ground?

9. Find the coefficient of kinetic friction on the ramp at the right. (*Hint: do the whole problem with variables first.)*