A-Day: Due Thurs., 10/14 (Assigned: 10/14)
B-Day: Due Fri., 10/15 (Assigned: 10/15)

2008 PreAP Forces 2

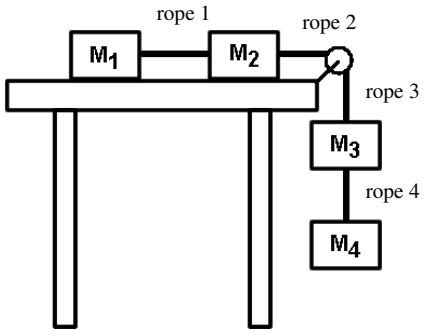
1. Static or Kinetic Friction?
   A. _____ Usually the smaller one.
   B. _____ If this is greater than the applied force, the object will slow down and eventually stop.
   C. _____ Between your shoes and the ground when you are walking normally.
   D. _____ Use to calculate acceleration.
   E. _____ When you are going down a slide.
   F. _____ How much force is needed to keep an object sliding.
   G. _____ When a car "loses traction".
   H. _____ Only exists when the object is not moving.
   I. _____ Maximum friction before an object slides.

2. A parachutist falling thru the air feels weightless.
   A. Do they still have weight?
   B. So, what we feel as our weight is really what?

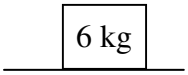
3. Heavier, lighter, or same as normal weight?
   A. ___ When an elevator starts moving up?
   B. ___ When an elevator is between floors?
   C. ___ When an elevator is stopping while moving up?
   D. ___ When an elevator starts down?
   E. ___ When an elevator is stopping while moving down?

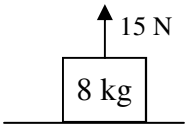
4. If there is friction on the table at the right,
   A. Draw the force diagram for mass 3.

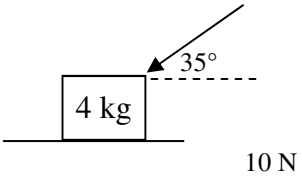
   B. Write Newton's second law for mass 3.



5. Find the normal forces for the following three masses.





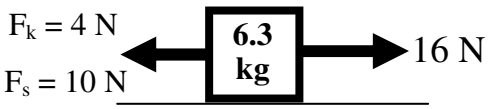


6. A 80 kg person is in an elevator. The elevator accelerates up at 3 m/s^2.
   A. Find the normal force on the person.

   B. How heavy do they "seem"?

7. If $\mu_s = 0.65$ and $\mu_k = 0.5$ and $F_N = 120$ N, calculate F_s and F_k.

More on Back

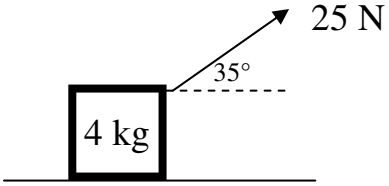


8. For the mass at the above
   A. Which friction is when the object is gripping the table?
   B. Which friction is when the object is slipping or sliding along the table?
   C. When do you add these two frictions together?
   D. How much force is necessary to keep this object moving?
   B. How much force is necessary to start this object sliding?
   C. If this object starts at rest, will this object slide?
   D. Find the acceleration of the object.

   E. Find the normal force on the object, if it is not accelerating in the y-direction.

   F. Find μ_s and μ_k.

9. For the 4 kg object at the right.
   A. Find the normal force on the object.



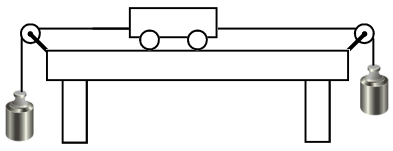
   B. If μ_s = 0.35 and μ_k= 0.2, find Fs and Fk.

   C. How much force is pulling to the right?

   D. Will the object slide? (*Prove it.)*

   E. If it does slide find its acceleration.

10. The cart at the right has two equal masses pulling on it.
    A. Does the cart have to be at rest?
    B. Could the cart be accelerating?
    C. Does the cart have balanced or unbalanced forces acting on it?
    D. Therefore, the velocity has to be:
    E. Is it at equilibrium or not?



11. Tell me everything you know about objects at equilibrium. (v, a, direction, forces, Δv…)