A-Day Due Thurs., Dec 4 (Assigned: 12/2)
B-Day: Due Fri., Dec 5 (Assigned: 12/3)

2008 Energy 7—Test Review

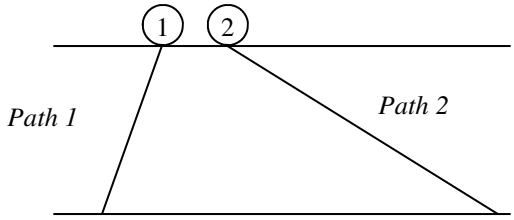
1. An object is at rest on the ground. A person lifts a 6 kg object up 8 meters in 4 seconds. Find the power used to lift the object.
   A) Write the Conservation of Energy equation:

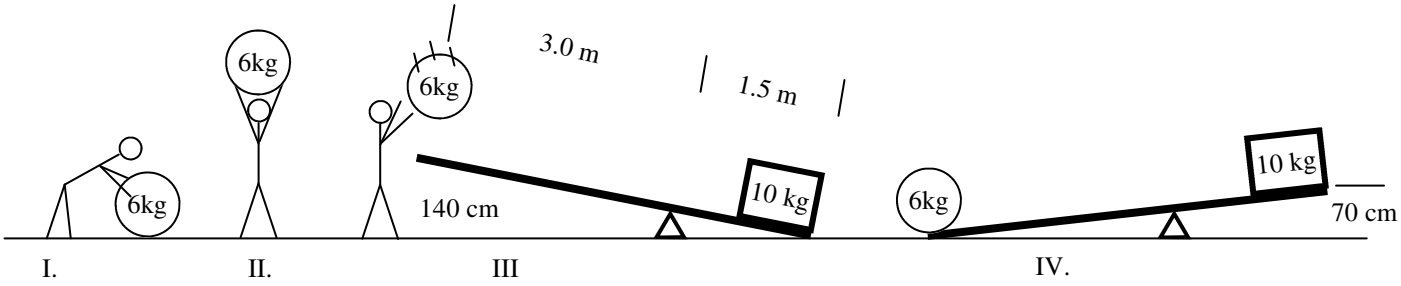
   B) So W =

   C) Calculate power.

2. If friction is acting on an object, does energy increase or decrease?

3. Two identical balls are at the top of a hill.
   A. What kind of energy do they have at the top?
   B What kind of energy will they have at the bottom?
   C. If there is no friction on either path, will energy be lost?
   D. If there is no friction on either path, which ball will have the greatest speed at the bottom?
   E. If there IS equal friction on both sides, which ball will have the greatest speed at the bottom?



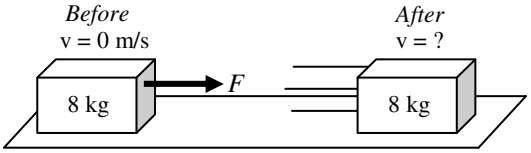


4. The above sequence shows Slim Jim lifting a medicine ball above his head and then dropping it onto a lever.
   A. What kind of energy does the ball start with?
   B. What kind of energy does Jim use to get the ball above his head?
   C. What is the weight of the object?
   D. What force is necessary to lift the object?
   E. What kind of energy does the ball have when above Jim's head?
   F. If Jim lifts the object up 2 m (Jim's tall) calculate the energy in part II.

   G. What kind of energy does the ball lose as Jim drops the ball?
   H. What kind of energy does the ball gain as it is dropped?
   I. What is the MA (mechanical advantage) of the lever?
   J. In part IV. the ball is at rest on the ground, again, so what kind of energy does it have?
   K. So, did the ball gain, lose, or transfer energy as it hits the lever in part III?
   L. So the ball does what on the lever?
   M. If the ball lowers the lever 140 cm, how much force does it apply to the lever?

   N. How much energy does the 10 kg box gain in part IV?

5. *Be sure that you know these types of energy: Mechanical; Thermal; Nuclear; Chemical; Radiant; Electrical.*



6. An object at rest is pulled and ends up moving 8 m/s.
   A. Calculate how much energy it ends up with?

   B. How much work was done on the object?

   C. If the object is accelerated in 4 seconds, calculate power.

Using "Momentum and Impulse" Notes.

7. A 6 kg object is at rest. Then a 12 N force pulls on it for 10 seconds.
   A. How much momentum does it start with?

   B. How much impulse acts on the object?

   C. How much momentum does it end up with?

   D. What is its final velocity?

On the test I will ask you to find the balanced ionic compound formulas, given a metal and a nonmetal.
Example: Write the formula for a balanced ionic compound for magnesium and chlorine.

Mg^{2+} ⟶⟵ Cl^{1-}
⟶⟵ Cl^{1-}

You can draw this if you want.

What I need is this formula:
$MgCl_2$

8. Write the formula for the balanced ionic compound between:
   A. Lithium and Nitrogen.
   B. Aluminum and Oxygen.