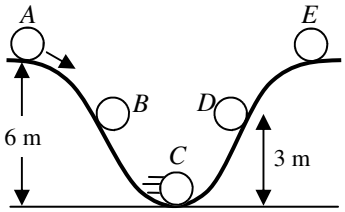
Name: _____

Period:_____

HW Unit 8:4 — Conservation of Energy
Mr. Murray, IPC
cstephenmurray.com

A-day: Due Tues., 2/27 (Assig: 2/23)
B-day: Due Wed., 2/28 (Assig: 2/26)

1. A 2 kg ball starts 6 m up a hill.
   A) What kind of energy does it have at A?
   B) Calculate the energy A.



   C) How much Ek will it have at C (if no friction)?

   D) How much Ep will it have at E?

   E) If B and D are 1/2 as high as A, how much Ep does the object have at B?

   F) How much Ek does the object have at D?

2. Is energy added or subtract?
   A) _____A car slows down at a stop sign.
   B) _____Friction acting on an object.
   C) _____If $E_{before} = E_{after}$.
   D) _____If E_{before} is less than E_{after}.
   E) _____If a force causes an object to speed up.
   F) _____If E_{before} is greater than E_{after} ($E_{before} > E_{after}$)

3. W_{in} or W_{out}?
   A) _____The force pushing an object up a ramp.
   B) _____How much E_p an object gains when lifted.
   C) _____The E_K an object gains from being pushed.
   D) _____Someone pushing down on a lever.
   E) _____A person pulling rope out of a pulley.
   F) _____How much usable energy the object has after work is done on it.

4. A 5 kg object is lifted up to the back of a 2 m tall ledge by a 20 N force pushing up a 10 m long ramp.
   A) Calculate the work in.

   B) Calculate the work out (what you got out).

   C) Calculate the efficiency of moving the object.

   D) Where did the extra energy go?

5. A 4 kg object starts at rest. A 25 N force pushes on it until it is going 5 m/s.
   A) What kind of energy does it have before? E_{before} =

   B) What kind of energy does it have afterwards? E_{after} =

   C) Does $E_{before} = E_{after}$?

   D) Was energy added or subtracted?
   E) Write a Law of Conservation of Energy equation with the above information (put the above information into $E_{before} = E_{after}$):

   F) Solve for the distance it was pushed.