Name: _____

Period:_____

HW Unit 8:6 — Thermodynamics
Mr. Murray, IPC
cstephenmurray.com

A-day: Due Mon., 3/5 (Assig: 3/1)
B-day: Due Tues., 3/6 (Assig: 3/2)

1. ConDuction, ConVection, or Radiation?
   A. ___ You pick up a hot piece of metal and get burned.
   B. ___ You put your hand above a pan of hot water.
   C. ___ You feel the heat from a brick wall when you put you hand next to the wall, but not touching it.
   D. ___ Why the upstairs of a house is warmer.
   E. ___ How the water in the bottom of a pan heats up.

2. Which way will the heat move on the graphic at the right.

30^oC	35^oC

3. After a while what will happen to the two objects (and use the vocab word).

4. Two make houses more energy efficient they have storm windows that have two pieces (panes) of glass with a vacuum between them. The vacuum has no air at all. What kinds of thermal transfer does this keep from happening?

5. Which vibrate more: hot atoms or cold atoms?
6. Atoms that vibrate more are moving more, so they have more of what kind of energy?

7. You look into an hot oven and there is a hot piece of wood and a hot piece of iron. They have both been in the oven for a while.
   A) Which is hotter?
   B) Which would you rather touch and why?

8. Does hot air rise? Explain.

9. Which can do more work: a 100 watt or a 300 watt motor?

10. Why?

11. A 6 kg object is at rest. You push with a 20N force for 30m. The object ends up going 10m/s.
    A) What kind of energy did it have before?
    B) What kind of energy did you put in?
    C) What kind of energy did you get out?
    D) Calculate the efficiency of the energy transfer.

12. A 2 kg object is moving 4 m/s. A 8N force stops it.
    A) What kind of energy before?

    B) What kind of energy after?

    C) Does $E_{before} = E_{after}$, was W_{added} or was $W_{subtracted}$?

    D) Write the Conservation of Energy equation for this object.

    E) Bonus: Solve for the distance it took for the object to stop.