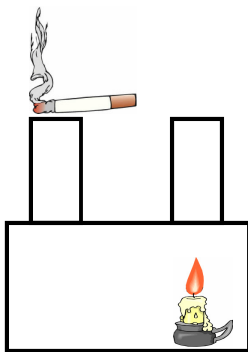


- Which do you use: Heat of fusion (L_f) or Heat of vaporization (L_v)?

A) _____ From a liquid to a gas?	D) _____ During melting?	G) _____ From a solid to a liquid?
B) _____ From a liquid to a solid?	E) _____ Turning to steam?	H) _____ During freezing?
C) _____ From a gas to a liquid?	F) _____ During condensation?	I) _____ During a temp change?
- Water freezes or melts at _____°C and boils or condensates at _____°C.
- Which equation do you use for the following situations: $Q = mL$ or $Q = mc_p\Delta T$?
 - _____ When something changes temperature.
 - _____ When something changes phase.
 - _____ When water cools from 50°C to 35°C.
 - _____ When water boils.
- 14 kg of water is condensed from steam to liquid.
 - What is the water's initial temperature?
 - What is the water's final temperature?
 - Does the water gain or lose energy?
 - Calculate the heat.
- 6 kg of water at -20°C is put on a stove until its temperature raises to 35°C.
 - At -20°C what phase is the water: solid, liquid, or gas?
 - At 35°C, what phase is the water: solid, liquid, or gas?
 - Use the following table to calculate the total heat. Put a line through any part you don't need.

+ or -?	mL or $mc_p\Delta T$	M	Cp or L	Ti	Tf	Calculate Q
Q_{steam}						
Q_{vapor}						
Q_{water}						
Q_{fusion}						
Q_{ice}						

Total Q =

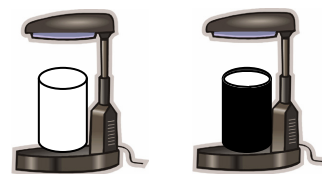


- Draw what will happen to the smoke from the cigarette on the diagram.
 - Explain why this occurs (be complete).
- 18 kg of gold at 80°C is dropped into 20 kg of water originally at 10° C. At what temperature will they come to thermal equilibrium?
 - What two things the same for both objects?
 - Use the thermal equilibrium notes EXACTLY to solve for the final temperature:

- Endothermal (N) or Exothermal (X)?
 - ___ Heat is added to a reaction
 - ___ A reaction gets cold.
 - ___ A reaction gets hot.
 - ___ Boiling water?
- Conduction (1), Convection (2), or Radiation (3)?
 - ___ How you could get heat thru a closed window.
 - ___ Cannot occur in a solid.
 - ___ Will be faster when something is wet.

10. (See HW: Heat 1) What is sublimation?
11. A piece of metal and a piece of wood are placed into a hot oven.
 A. Which heats faster?
 B. When they are removed, which one will cool faster?
 (Things that heat faster, cool faster.)
12. Two identical cans of water are placed under identical heat lamps.
 A. Which can's water will raise temperature fastest?
 B. If they are taken away from the lamp and begin at the same initial temperature, which can will drop temperature fastest?

Two cans of water under heat lamps



13. Think about water on your skin.
 A) Does water have to be at 100°C to turn to a gas?
 B) Evaporation is a _____ process. So the area around evaporating water (or any other liquid) will _____ down.
14. Acid, Base, or neutral?
 A. _____ Makes OH⁻ ions in water. D. _____ Makes H⁺ ions in water. G. _____ pH of 7 to 14
 B. _____ pH of 0 to 7 E. _____ Pure water. H. _____ Salt water
 C. _____ pH 7 F. _____ Feels squeaky clean

15. Solution A (pH 4); Solution B (pH 2): Which one has more H⁺ ions? Which one has less OH⁻ ions?
16. You need a pH of 12; you have a pH of 13.4, should you add an acid or a base?
17. You are looking at a cell under a microscope. You observe that the cell has a cell membrane and cell wall but it does not have a nucleus or any membrane-bound organelles. Based on this observation you can conclude the cell is—
 A. A plant cell; B. A bacterium; C. An animal cell. D. Dead.

18. Which of the following is not a component of a nucleotide?
 A. Five-carbon sugar; B. Nitrogenous base; C. Amino acid; D. Phosphate Group.

19. What takes place during replication?
 A. The DNA is copied before cell division occurs.
 B. Information from mRNA is used to make proteins.
 C. mRNA makes a copy of the DNA template.
 D. rRNA read the information from mRNA to make proteins.

20. What kind of mutation occurred in the following sequence of bases in a DNA molecule?
 Original sequence: AGC GGT TAT
 Mutation sequence: AGG GTT AT
 A. Deletion B. Chromosomal C. Germ D. Inversion
 (Hint: use common English.)

21. Which organisms are the producers?
 A. Squirrels B. Plants C. Insects D. Rabbits