

Phases Changes and Molecular Motions

Name: _____

Date: _____ Per: _____

Part 1: Heating and Cooling Curves

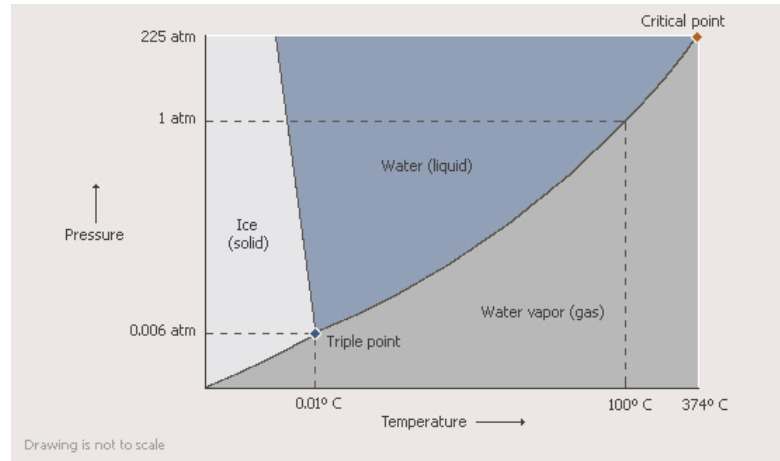
For each of the curves provided complete the following:

- Label each with a title: Heating Curve or Cooling Curve
- Indicate the phases of matter present at each point of the graph by labeling them on the graph
- Indicate what process is happening at each of the flat lines on the graph
- For each process label whether the molecules are spreading out or moving closer together
- Label melting, boiling, and freezing points on the appropriate graphs

When you have labeled both graphs, answer the following questions.

1. What happens to temperature over time on the cooling curve?
2. Based on this trend in temperature, what is happening to the molecules over time on the cooling curve?
3. What happens to temperature over time for the heating curve?
4. Based on this trend in temperature, what is happening to the molecules over time on the heating curve?

Part 2: Use the phase diagram for water to complete the table with the temperature, pressure, and name of the point (if applicable) at which each description occurs.



Part 3: In the space provided, write the letter of the term or phrase that best answers the question.

- _____ A sample of matter whose particles are close together and cannot move past each other is
 A. A solid B. A liquid C. A gas D. Viscous
- _____ Fluids are materials that will flow from one place to another. Which of the following is a fluid?
 A. Solid B. Liquid C. Gas D. Both (B) and (C)
- _____ If particles have little attraction for each other and can freely move throughout a container, the particles are part of a
 A. Solid B. Liquid C. Gas D. None of the Above
- _____ A liquid becomes a gas during
 A. Evaporation B. Condensation C. Sublimation D. Deposition
- _____ Some products advertise that they are “freeze-dried” which means that water is removed from them while they are solids. What process is used in producing these products?
 A. Condensation B. Evaporation C. Sublimation D. Deposition
- _____ Which of the following might occur when an object is heated?
 A. Condensation B. Melting C. Deposition D. Freezing

Description of Point	Temperature	Pressure	Point
The temperature and pressure at which three phases of water exist in equilibrium			
The temperature at which water boils at 1.0 atm of pressure			
The temperature at which water freezes/melts at 1.0 atm of pressure			
The temperature and pressure at and above which the properties of water vapor cannot be distinguished from those of liquid water—water exists as a single phase			