

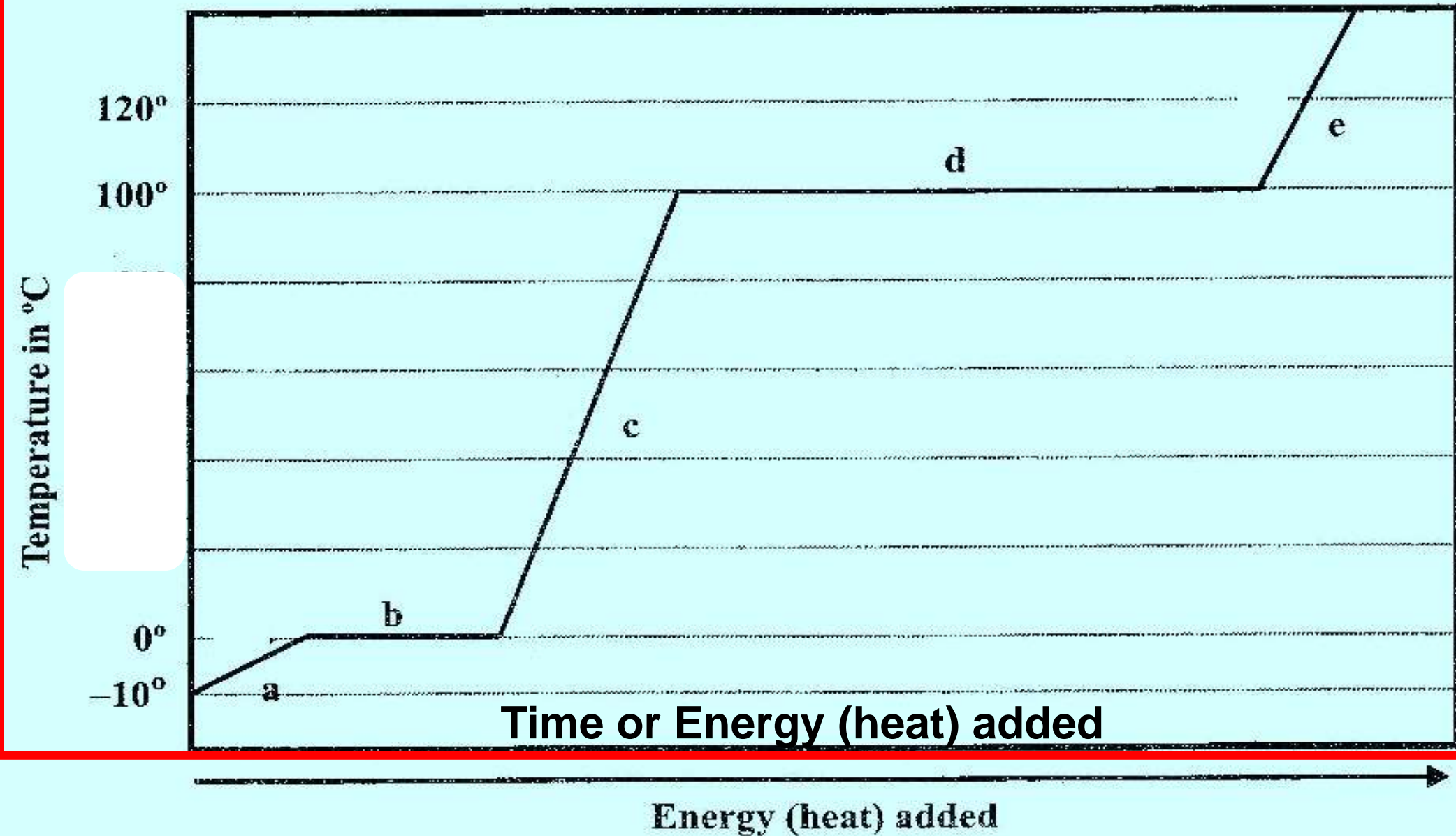
# Chemistry Bell Work, April 30 – May 3

KMT 3: Heating Curve Graph, Cooling Curve  
Graph, Kinetic Energy,  
Describing Substances: Heterogeneous &  
Homogeneous Mixtures





## Changing the States of Water





2. What phase is a? (A phase is a state of matter.)

**solid**

3. What phases exist together at b?

**Solid & liquid**

5. What phase is c?

**liquid**

6. What phases exist together at d?

**Liquid and gas**

7. What phase is e?

**gas**

8. What section of the graph above represents melting?

**B**

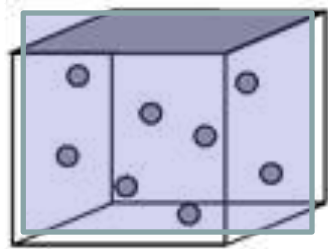
9. What section of the graph above represents boiling?

**D**

10. Label the sections of the graph: solid, liquid, gas.

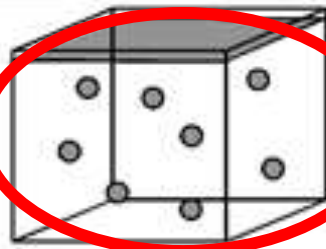
# Chem, Bell Work, Tuesday, May 1, Draw everything

1. The diagram below left shows a sample of gas at 25°C. Which of the following best represents the same gas at 0°C? At -250°C?

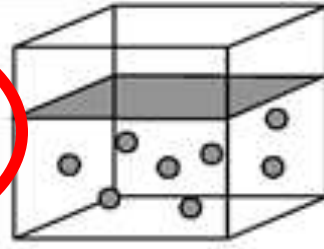


25 C

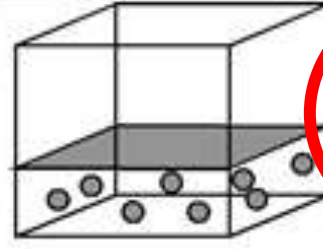
$$V \propto T$$



A -0 C



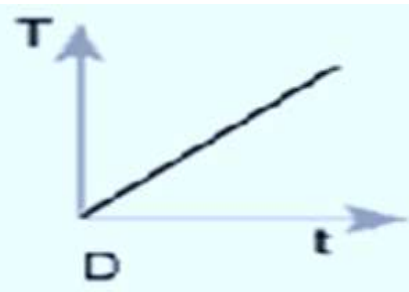
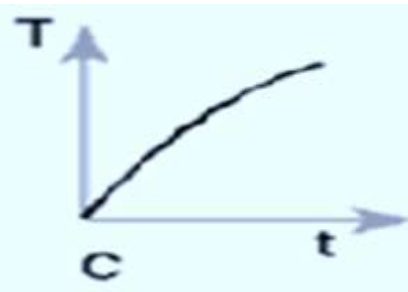
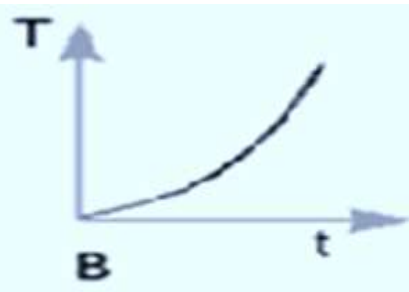
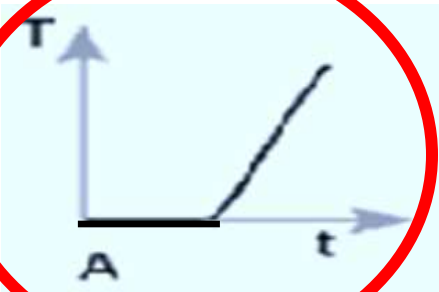
B



C



-250 C



2. Choose the graph which best describes the change in temperature,  $T$ , of ice water as a function of time,  $t$  ( $f(x) = t$ ) neglecting any heat loss to the environment

- a. The temperature stays constant for a while, then rises (graph A)
- b. The temperature rises more slowly at first, then faster (graph B)
- c. The temperature rises more rapidly at first, then slower (graph C)
- d. The temperature rises at a constant rate (graph D)



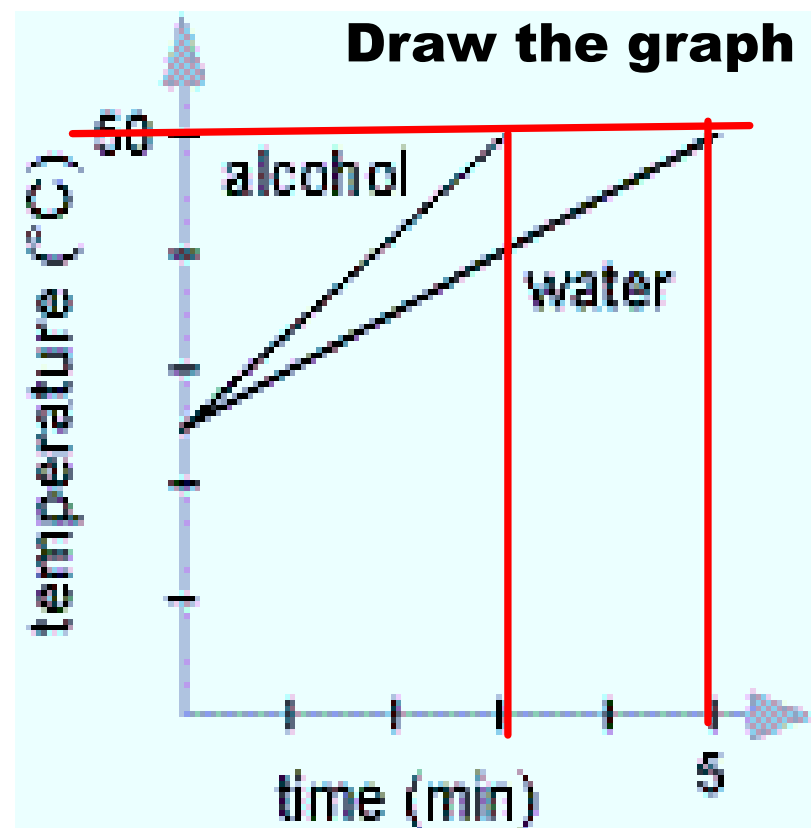
## Chem, Bell Work, Tuesday, May 1



3. Equal masses of water and alcohol, at  $25^{\circ}\text{C}$ , are heated at the same rate. After 3 minutes the temperature of the alcohol is  $50^{\circ}\text{C}$ . It took 5 minutes for the water to reach  $50^{\circ}\text{C}$ . Which of the following is true once the water and alcohol have both reached  $50^{\circ}\text{C}$ ?

- a. The water received more heat (energy) than the alcohol.
- b. The alcohol received more energy (heat) than the water.
- c. Both received the same amount of energy or heat.

**Heat is energy!!!!**



Amount of Heat or Energy 



## Chem, Bell Work, Tuesday, May 1

4. Given a confined gas at constant volume and temperature, if the number of gas molecules is decreased the kinetic energy,  $KE = \frac{1}{2} mv^2$  ( $m$ = mass,  $v$ = velocity (speed)), will

- a. increases
- b. decreases
- c. remains the same
- d. varies depending on the pressure

**Mass measures the number of particles**

5. When a sample of gas is heated, its kinetic energy,  $KE = \frac{1}{2} mv^2$

- a. increases
- b. decreases
- c. remains the same
- d. varies depending on the pressure
- e. varies depending on the volume

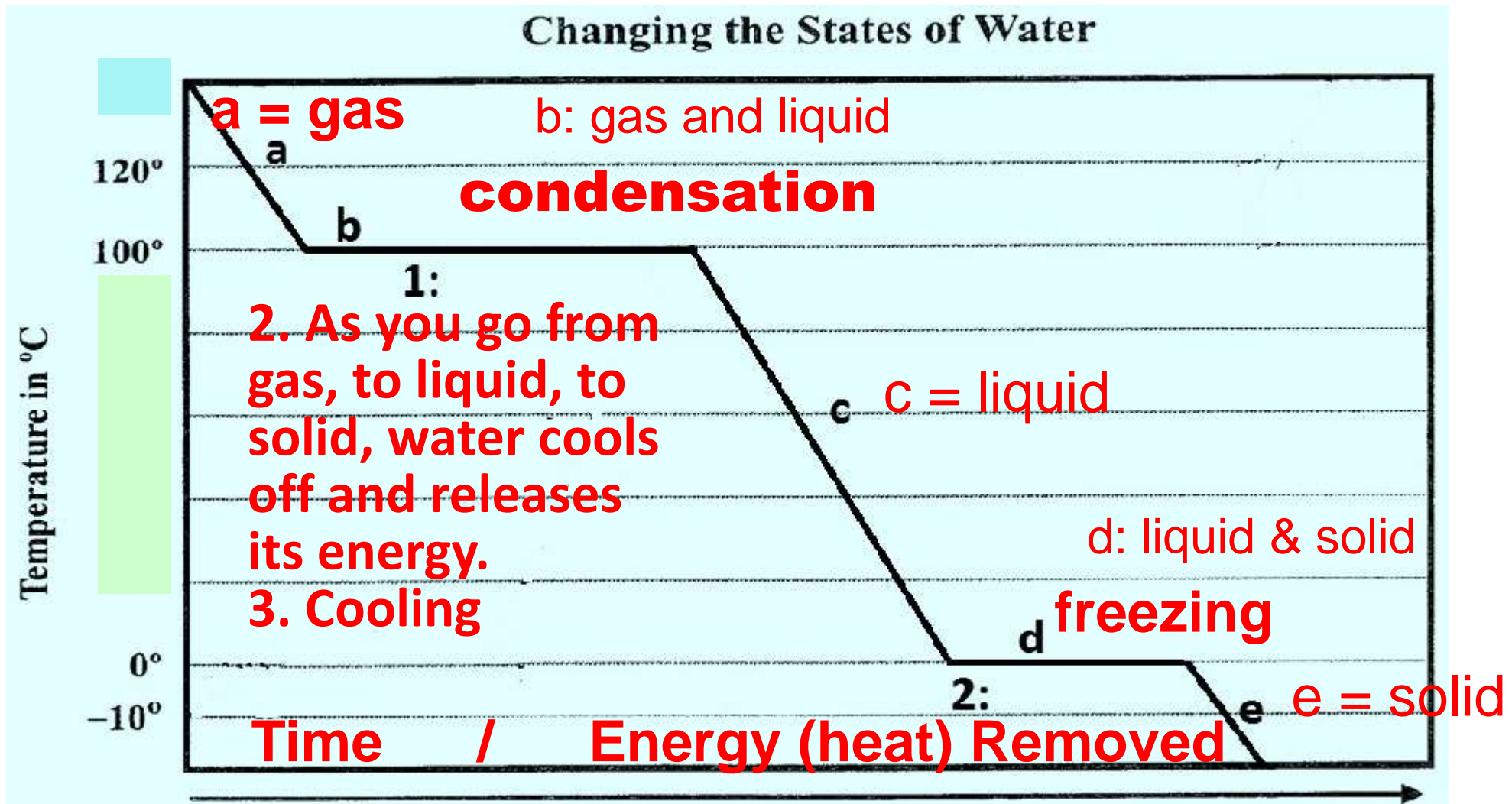
**Heating causes the velocity of molecules to increase so KE increases.**



Bell Work, Wed., , May 2, 2018, 3 questions



1. Draw the graph. Label the states of matter found in each lettered section of the graph. Name the process taking place at 1 and 2 on the graph.
2. As you move from gas to liquid to solid on the curve, is energy being absorbed or released by the water? 3. What is this process called?





Bell Work, Wednesday, May 2, 2018,

**2. As you move from gas to liquid to solid on the curve, is energy being absorbed or released by the water?**

**released**

**3. What is this process called?**

**cooling**





1. Define characteristic properties.

These properties depend on the nature and not the quantity of the substance; these include density, melting and boiling points and heat capacity and conductivity.

2. Matter that is not mixed uniformly and is not evenly distributed is heterogeneous matter.

3. Matter that is evenly distributed, and is the same throughout is homogeneous matter.

4. Homogeneous matter can be classified as a pure substance or mixture.

5. A mixture is made of two or more substances.

6. Mixtures can be heterogeneous or homogeneous.



7. Substances aren't mixed uniformly and are not evenly distributed are heterogeneous mixtures.
8. Substances are evenly distributed, and the mixture is uniform (the same throughout) are homogeneous mixtures.
9. Another term for a homogeneous mixture is a solution.