

Clayton Valley Charter High School

Chemistry

Benchmark #4

Review

2017-2018

Name: _____ Period: _____

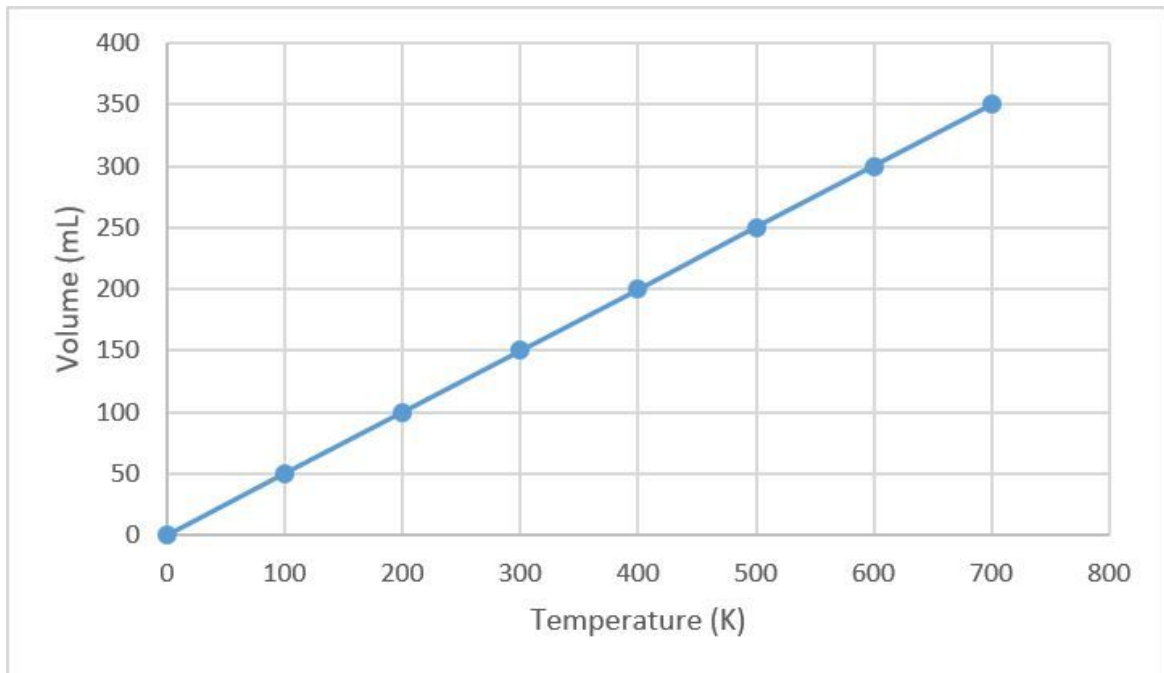
Student Instructions:

1. Complete the entire review guide
2. This will count for credit.
3. Anything that you struggle with is something that you need to study.
4. Do not procrastinate - you will only struggle that much more on the benchmark exam.
5. *YES, the benchmark counts for actual points in your grade. **Not extra credit.***

Section 1: Gas Laws and Kinetic Molecular Theory

1. A Peep is taken from the cupboard and put in the microwave. If the cupboard is at 25°C and the Peep's initial volume is 100 mL, what will the volume of the Peep be if it is heated to 75°C ?
2. A deep sea diver seals a 20 mL water bottle at sea level, where the pressure is 1 atm. He takes it on a dive to 100 ft below sea level, where the pressure is 4 atm. What will be the volume of the bottle at this depth?
3. "Deflategate" was a controversial issue in the NFL, where the New England Patriots were accused of deflating balls during a playoff game to gain an unfair advantage. The rules state that balls must be inflated to a minimum of 12.5 psi in a locker room environment at 22°C . At kickoff, the temperature measured 9°C .
 - a. Assuming the balls were filled at exactly 12.5 psi before the game, what should the halftime pressure of the balls be?
 - b. The balls were found to be at 11.1 psi at halftime. Using this data, what would have the original psi of the balls been, assuming same temperature conditions?
4. A 4.5 L container of gas has a pressure of 3 atm at 100°C . The container is expanded to 6.0 L and the temperature is increased to 200°C . What is the final pressure of the container?

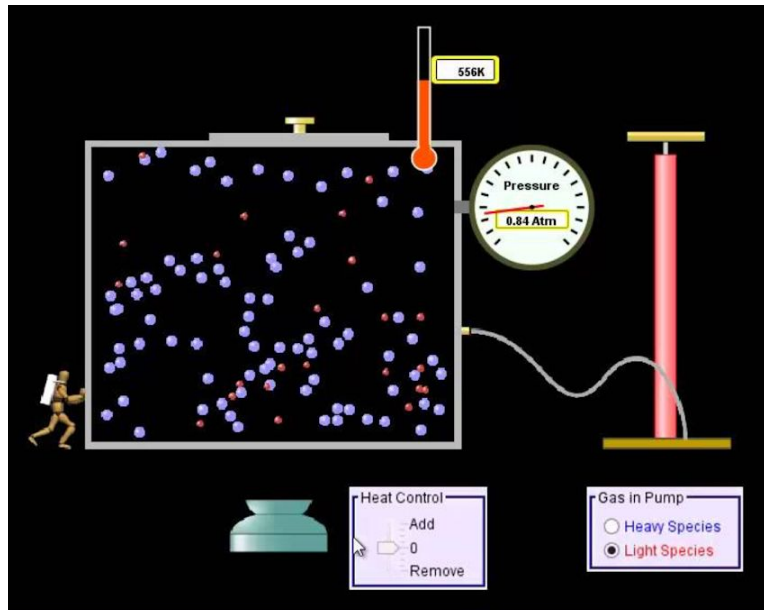
Use the graph to answer the following questions.



5. Define the two types of graphical relationships we've discussed:
 - a. Direct Relationship:
 - b. Indirect/Inverse Relationship:
 - c. [Circle One] Does the graph depict an INDIRECT or DIRECT relationship?
 - d. Describe the movement of the particles at the point (0,0).

6. Qatar is hosting the World Cup in 2022. The average temperatures in June in Qatar are 42°C. Convert this to °F and Kelvin.

7. Propose what happens to particles in a system (whether a container, a room or the universe) if absolute zero is reached. Support this explanation by drawing a particle model.



For numbers 9-10, refer to the figure above.

8. Explain *two* different ways of how to make the pressure gauge increase.

9. Explain *two* different ways how to make the temperature decrease.

10. Snakes have evolved to use infrared radiation in their vision to capture their prey. Explain the long-term effects of global warming and its potential effects on snakes.

11. Compare and contrast the Greenhouse Effect by drawing a diagram of a car on a hot day and the Earth's atmosphere.