Honors Chemistry Hour\_\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
Dr. Wexler
Gas Laws Review Quiz 1 (HS-PS1-3; HSN-Q.A.1)
Date\_\_\_\_\_

Part I. True-False. If false, revise the question to make it true.

1. Solids are less dense than gasses.

2. Molecules in a liquid are free to move around like a gas and spread out to occupy the available space.

3. Heating a gas causes it to contract.

4. Cooling water vapor causes it to evaporate.

5. Evaporation is a type of chemical change.

6. When water freezes it becomes a gas.

7. In a closed, rigid container, heating a gas causes its volume to increase.

8. When you use a fire extinguisher to put out a fire, the metal of the fire extinguisher will feel cool to the touch.

9. If you place a balloon filled with helium in a freezer, it will become partially deflated (smaller in volume).

10. Compressing a gas causes the gas molecules to spread farther apart.

11. Compressing a gas causes the gas to heat up.

12. If you pump additional air into a basketball that is already full, the basketball will become warm to the touch.

13. Atmospheric pressure is 14700 pounds per square inch.

14. Air molecules become farther apart as you go up a tall mountain.

15. Air molecules become cooler as they spread farther apart.

16. The % O2 in air is 19.6%.

17. Gay-Lussac’s Law states that P1T2 = P2T1

18. Gay-Lussac’s Law states that as the temperature (in Kelvin) doubles in a closed, rigid container the pressure also doubles.

19. Boiling temperature is 0°C

20. Boiling of water occurs when air pressure is greater than vapor pressure

Part II. Word Problem (10 pts)
The temperature inside a freezer is -20°C. You have a balloon with a volume of 0.5L at 22°C. You place the balloon in the freezer. Once it is fully cooled, what will be the volume of the balloon? Show all calculations using the following format:

A. V1 = \_\_\_\_\_\_

B. T1 = \_\_\_\_\_\_

C. T2 = \_\_\_\_\_\_\_

D. The exact formula (variables only) you will use to calculate V2 is: V2 =

E. Plug your numbers into the formula and calculate V2. Be sure to include the unit of measurement in your answer.