Name:_____

Hour:_____

Chemistry – Unit 2 Review

1. **Kinetic Particle Theory of gasses**
   a) Describe what causes gas pressure.

   b) Use particle diagrams to represent samples of a cold gas and a hot gas. Explain your particle diagram.

   c) Explain why the air freshener was eventually able to make it to everyone in the room. Use the Kinetic particle theory in your explanation.

2. Determine the relationship between the variables below. Explain using particle diagrams why this relationship exist.

Pressure and Volume

As pressure _____ the volume _____

Particle Diagram:

Temperature and Pressure

As temperature _____ the pressure_____

Particle Diagram:

Temperature and Volume

As the temperature _____ the volume_____

Particle Diagram:

Puffs and Pressure

As the number of puffs _____ the pressure_____

Particle Diagram:

3. A sample of gas has a volume of 56.0 mL when measure at 35.0˚C and 1.40 atm. What pressure in atm will the gas have at the same temperature and a new volume of 40.0 mL?

	P	T	V	n
Initial				
Final				
Change				
Effect				

Answer with Units_____

4. Draw a particle diagram to show the initial and final conditions for question 3.

5. Joe knew he had 2.5 moles of Oxygen gas in a cylinder at standard temperature and pressure, which has a volume of 5.30 mL. Joe **adds** 1.5 more moles what is the new pressure of the gas? Assume that the cylinders volume and temperature did not change.

	P	T	V	n
Initial				
Final				
Change				
Effect				

Answer with Units_____

6. Draw a particle diagram to show the initial and final conditions for question 5.

7. Suppose that 25.0 mL of a gas at 0.75 atm and 20.0˚C is converted to standard temperature and now occupies a volume of 17.0 mL. What would the new pressure be?

	P	T	V	n
Initial				
Final				
Change				
Effect				

Answer with Units_____

8. A small weather balloon with a volume of 1200 L has a pressure of 1.0 atm and a temperature of 135^0 C. If the balloon ascends to an elevation with a pressure of 0.40 atm and the temperature is 12^0 C, what will the volume of the gas inside the balloon be at this new elevation?

	P	T	V	n
Initial				
Final				
Change				
Effect				

Answer with Units_____

9. The temperature inside my refrigerator is about 4.0 ˚C. If I place a balloon in my fridge that initially has a temperature of 22.0 ˚C and a volume of 0.40 L, what will the volume of the balloon be when it is fully cooled by the fridge?

	P	T	V	n
Initial				
Final				
Change				
Effect				

Answer with Units_____

10. Draw a particle diagram to show the initial and final conditions for question 9.

11. Calculate the final pressure inside a scuba tank after it cools from 101 ˚C to 25.0 ˚C. The initial pressure in the tank is 130.0 atm.

	P	T	V	n
Initial				
Final				
Change				
Effect				

Answer with Units_____

12. Draw a particle diagram to show the initial and final conditions for question 11.