Advanced Chemistry **NAME: _____PER: _____**
All Gas Laws Practice Problems WS

Instructions: Determine which gas law to use by looking at the information given. Carry out the following law problems. SHOW ALL WORK in the empty space below the questions. Write the final answer on the blanks provided. Remembers the units. If needed, round to the correct number of significant figures.

1. The initial temperature of a 1.00 liter sample of argon is 20.0ºC. The pressure is decreases from 720.0 mm Hg to 360 mm Hg and the volume increases to 2.14 liters. What is the new temperature of the argon gas?

1. _____

2. A gas has a volume of 8.51 liters and a pressure of 760.0 torr. If the volume was originally 6.44 liters, what was the original pressure?

2. _____

3. If I have 4.550 moles of a gas at a pressure 5.600 atm and a volume of 12.300 liters, what is the temperature of the gas?

3. _____

4. A 6.00 L sample contains 0.500 moles of a gas. If an additional 0.250 moles of the same gas was added, what is the final volume of the gas?

4. _____

5. A sample of nitrogen gas occupies a volume of 2.00 L at a pressure of 756 mm Hg and 273 K. The volume increases to 4.50 L and the temperature decreases to 137 K. What is the final pressure exerted on the gas?

5. _____

6. A gas occupies 12.30 liters at a pressure of 40.00 mm Hg. What is the volume when the pressure is increased to 60.00 mm Hg?

6. _____

7. If I have an unknown quantity of a gas at a pressure of 1.200 atm , a volume of 31.05 liters, and a temperature of 87.45ºC, how many moles of gas do I have?

7. _____

8. A gas occupies 900.00 mL at a temperature of 27.00ºC. What is the volume at 132.00ºC?

8. _____

9. A 25.5 liter balloon holding 3.54 mole of carbon dioxide leaks. If we were able to determine that 1.954 moles of carbon dioxide escapes before the container could be sealed, what is the new volume of the container?

9. _____

10. Calculate the new temperature when a gas with the volume of 2.450 L at 20.00ºC is compressed to a new volume of 1.000 L.

10. _____

11. A sample of gas contains 2.98 moles of hydrogen in a 32.8 L container. How many moles of hydrogen are in a 45.3 liter containers?

11. _____

12. If I have 0.275 moles of gas **at STP,** what is the volume of the gas?

12. _____

13. Some students believe that teachers are full of hot air. If I inhale 2.240 L of gas at a temperature of 18.50ºC and it heats to a temperature of 38.50ºC in my lungs, what is the new volume of the gas?

13. _____

14. If I have 21.366 liters of gas held at a pressure of 78.11 atm and a temperature of 900.0 K, what will be the volume of the gas if I decreases the pressure to 45.55 atm and decreases the temperature to 750.0 K?

14. _____

15. A balloon with a volume of 2.00 L is filled with a gas at a pressure of 3.00 atmospheres. If the pressure is reduced to 0.500 atmospheres, what would be the new volume of the balloon?

15. _____