Advanced Chemistry **NAME: _____PER: _____**
Combined/Ideal Gas Law WS

Instructions: 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. Round to the correct number of significant figures.

Combined Gas Law

1. If I initially have a gas at a pressure of 12.0 atm, a volume of 23.0 liters, and a temperature of 200.0 K, and then I raise the pressure to 14 atm and increase the temperature to 300.0 K, what is the new volume of the gas?

1. _____

2. A gas takes up a volume of 17.0 liters, has a pressure of 2.30 atm, and a temperature of 299 K. If I raise the temperature to 350.0 K and low the pressure to 1.50 atm, what is the new volume of the gas?

2. _____

3. A gas that has a volume of 28.0 liters, a temperature of 45.0ºC, and an unknown pressure has its volume increased to 34.5 liters and its temperature decreased to 35.0ºC. If I measure the pressure after the change to be 2.00 atm, what was the original pressure of the gas?

3. _____

4. If I have a volume of 17.2 liters of gas at a temperature of 67.0ºC and a pressure of 88.89 atm, what will be the pressure of the gas if I raise the temperature to 94.0º and decrease the volume to 12.5 liters?

4. _____

5. I have an unknown volume of gas at a pressure of 0.500 atm and a temperature of 325 K. If I raise the pressure to 1.20 atm, decrease the temperature to 322 K, and measure the final volume to be 48.8 liters, what was the initial volume of the gas?

5. _____

6. If I have 2.90 liters of gas at a pressure of 5.50 atm and a temperature of 50.0ºC, what will be the temperature of the gas if I decrease the volume of the gas to 2.44 liters and decrease the pressure to 3.00 atm?

6. _____

Ideal Gas Law

7. At what temperature will 0.654 moles of neon gas occupy 12.30 liters at 1.95 atmospheres?

7. _____

8. If I have an unknown quantity of gas at a pressure of 1.27 atm, a volume of 31.6 liters, and a temperature of 87.4ºC, how many moles of gas do I have?

8. _____

9. If I contain 3.00 moles of gas in a container with a volume of 60.6 liters and at a temperature of 400.15 K, what is the pressure inside the container?

9. _____

10. If I have 7.77 moles of gas at a pressure of 0.0915 atm and at a temperature of 56.3ºC, what is the volume of the container that the gas is in?

10. _____

11. A sample of argon gas **at STP** occupies 56.2 liters. Determine the number of moles of argon.

11. _____

12. Determine the volume occupied by 0.0532 moles of carbon dioxide gas **at STP.**

12. _____