Gas Laws WS
Ideal Gas Law

1) **The Ideal Gas Law** expands on the combined gas law and includes the _____

   of gas present. This value is _____ proportional to the pressure and volume

   of the gas, but _____ proportional to the temperature of the gas. There is a

   proportionality constant which can have several values but the two most common are

   _____ $\frac{atm \cdot L}{mol \cdot K}$, and _____ $\frac{kPa \cdot L}{mol \cdot K}$. If 3 of the four variables are known, the

   mathematical formula to determine the remaining variable is:

   $$PV = nRT$$

2) If you have 4.0 moles of a gas at a pressure of 5.6 atm and a volume of 12 liters, what is the temperature?

3) If you have an unknown quantity of gas at a pressure of 1.2 atm, a volume of 31 liters, and a temperature of 87°C, how many moles of gas do you have?

4) If you contain 3.5 moles of gas in a container with a volume of 60. Liters and at a temperature of 410 K, what is the pressure inside the container?

5) If you have 7.7 moles of gas at a pressure of 0.090 atm and at a temperature of 56°C, what is the volume of the container the gas is in?

6) If you have 17 moles of gas at a temperature of 67°C, and a volume of 88.89 liters, what is the pressure of the gas?

7) If you have an unknown quantity of gas at a pressure of 0.5 atm, a volume of 25 liters and a temperature of 300 K, how many moles of gas do you have?

8) If you have 21 moles of gas held at a pressure of 78 atm and a temperature of 910 K, what is the volume of the gas?

9) If you have 1.9 moles of gas held at a pressure of 5.5 atm and in a containter with a volume of 75 liters, what is the temperature of the gas?

10) If you have 2.4 moles of gas held at a temperature of 97°C and in a container with a volume of 45 liters, what is the pressure of the gas?

11) If I have an unknown quantity of gas held at a temperature of 1195 K in a container with a volume of 25 liters and a pressure of 560 atm, how many moles of gas do I have?

12) If I have 0.275 moles of gas at a temperature of 75 K and a pressure of 1.75 atmospheres, what is the volume of the gas?

13) If I have 72 liters of gas held at a pressure of 3.4 atm and a temperature of 225 K, how many moles of gas do I have?