**Study Guide-Gas Laws**

°C = (°F -32) 5/9

°F = 9/5°C + 32  
K = °C + 273

14.7 lb/in2= 760 mmHg=760 torr= 1 atm = 101325 Pa

PV =nRT P1V1 = P2V2

T1  T2

R=0.0821 atm\*L/mol\*K

Pressure and Temperature conversions

Combined gas law

Ideal gas law

**What Are the Four Factors that Affect Gases?**

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Circle the goal, LIST the givens with labels,**

**write the formula that you will use, and solve for each.**

1. Convert -12oF to C 2. Convert 280K to Celsius, then to Fahrenheit.

3. A sample of chlorine occupies a volume of 3.7 liters at 760 mm Hg. What pressure would the gas exert if the volume was decreased to 32 liters?

4. What is the temperature of a helium-filled balloon that has 6.5 moles, a volume of 32 liters and 2.4 atmospheres?

5. A gas occupies a volume of 560.0 liters at a temperature of 120OC. What volume will the gas have if it the temperature is changed to 16OC . There is no change in the number of moles or pressure.

6. A gas tank has a volume of 24 liters with a pressure of 18.4 atm and a temperature of 32OC. What is the pressure when the same amount of gas is put in a 14.9 L tank with a temperature of 192 OC?

7. How many moles of sulfur dioxide are held inside a 65 L canister at pressure of 780 torr and temperature of 45 OC?

8. The air pressure for a certain tire is 33.3 psi. What is the pressure in torr?

9. Convert 2.6 psi to kilopascals.

**Which Equation to Use?**

1.Amount of gas and temperature are constant. When volume is increased, pressure will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Equation to use:

2. Amount of gas and pressure are constant. When volume is increased, temperature will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Equation to use:

3. Amount of gas and volume are constant. When temperature is increased, pressure will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Equation to use:

4. Amount of gas is constant. While volume, pressure and temperature is varied.

Equation to use:

**Try this one:**

5. Pressure and temperature are constant. When amount of gas is increased, volume will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_