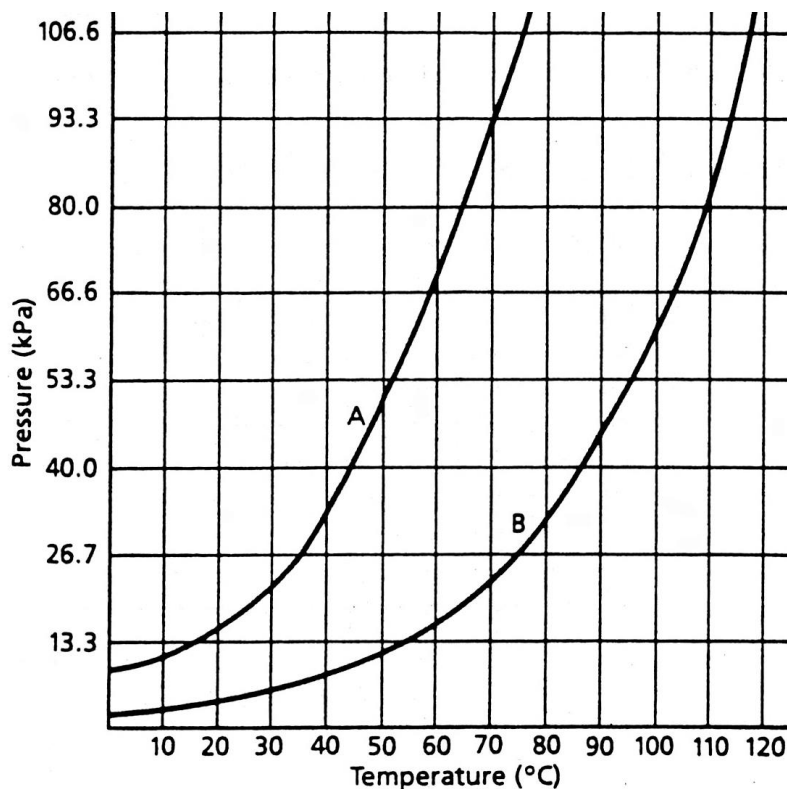


Name _____ Date _____

Vapor Pressure Curves**Directions:** Use the graph to answer the questions below.

1. What is the vapor pressure of A at 35°C? _____
2. What is the vapor pressure of B at 35°C? _____
3. At what temperature is the vapor pressure of A 106.6 kPa? _____
4. What is the vapor pressure of B at this temperature? _____
5. At what temperature is the vapor pressure of B 106.6 kPa? _____
6. What is the "normal" boiling point of A? _____
7. What is the "normal" boiling point of B? _____
8. At what temperature would A boil in Denver where atmospheric pressure is 93.3 kPa? _____
9. What would the atmospheric pressure have to be in order for B to boil at the same temperature as you gave in your answer to #8? _____
10. Which substance has the strongest intermolecular forces? How can you tell? _____

Name _____ Date _____

Boyle's Law Worksheet

Directions: Answer the following questions. For any math problems be sure to show your work and include units!

- 1) What is the equation for Boyle's Law? _____
- 2) Sketch a graph that represents the relationship for Boyle's law below. The relationship is _____.
- 3) Rearrange the Boyle's law equation to solve for P_2 . _____
- 4) A gas occupies 12.3 liters at a pressure of 40.0 mm Hg. What is the volume when the pressure is increased to 60.0 mm Hg?
- 5) A 2.0 L container of nitrogen had a pressure of 3.2 atm. What volume would be necessary to decrease the pressure to 1.5 atm?
- 6) A sample of carbon dioxide occupies a volume of 3.50 L at 125 kPa of pressure. What pressure would the gas exert if the volume were decreased to 2.00 L?
- 7) A sample of hydrogen gas at standard pressure occupies a volume of 520 mL. What would be the new volume if the pressure increases to 2.25 atm?
- 8) Fluorine gas exerts a pressure of 900 torr. When the pressure is changed to 1.50 atm its volume is 250 mL. What was the original volume?
- 9) What pressure is required to compress 196.0 liters of air at 1.00 atmosphere into a cylinder whose volume is 26.0 liters?

Name _____ Date _____

Charles' Law Worksheet

Directions: Answer the following questions. For any math problems be sure to show your work and include units.

- 1) What is the equation for Charles' Law? _____
- 2) Sketch a graph that represents the relationship for Charles' law below. The relationship is _____.
- 3) Rearrange the Charles' law equation to solve for T_2 . _____
- 4) A gas sample at 40.0°C occupies a volume of 2.32 L. If the temperature is raised to 75.0°C , what will the volume be, assuming the pressure remains constant?
- 5) A sample of neon gas at 50°C and a volume of 2.5 L is cooled to 25°C . What is the new volume?
- 6) A sample of gas is cooled and its volume went from 380 mL to 250 mL. If the final temperature was -55°C , what was the original temperature?
- 7) Chlorine gas occupies a volume of 25 mL at 300 K. What will the volume be at 750 K?
- 8) A gas occupies 900.0 mL at a temperature of 27.0°C . What is the volume at 132.0°C ?
- 9) What is the volume of the air in a balloon that occupies 0.620 L at 25°C if the temperature is lowered to 0.00°C ?

Name _____ Date _____

Avogadro's Law Worksheet

Directions: Answer the following questions. For any math problems be sure to show your work and include units.

- 1) What is the equation for Avogadro's Law? _____
- 2) Sketch a graph that represents the relationship for Avogadro's law below. The relationship is _____.
- 3) Rearrange the Avogadro's law equation to solve for V_2 . _____
- 4) How many moles of gas occupy 2.25 L if there are 0.98 moles found in a 6.11 L container?
- 5) What size container can hold 3.9 moles of gas if the original container was 1.5 L and can hold 8.1 moles of gas?
- 6) What happened to the number of moles in a sample that originally occupied 500 mL with 2.50 moles and then occupied 750 mL?

Name _____ Date _____

Gay Lussac's Law Worksheet

Directions: Answer the following questions. For any math problems be sure to show your work and include units.

- 1) What is the equation for Gay Lussac's Law? _____
- 2) Sketch a graph that represents the relationship for Gay Lussac's law below. The relationship is _____.
- 3) Rearrange the Gay Lussac's law equation to solve for P_2 . _____
- 4) A gas in a closed container has a pressure of 300 kPa at 30.2 °C. What will the pressure be if the temperature drops to -172.8 °C?
- 5) The pressure in a car tire is 1.84 atm at 27.5 °C. At the end of a trip on a hot, sunny day, the pressure has risen to 2.49 atm. What is the temperature of the air in the tire?
- 6) Determine the pressure (in atm) when a constant volume of gas at standard pressure is heated from 20.0 °C to 30.0 °C.
- 7) A gas is collected at 22.0 °C and 745.0 mm Hg. When the temperature is changed to 0 °C, what is the final pressure?
- 8) Chlorine gas has a temperature of 15°C at 720 torr. What temperature would it be if the pressure is increased to 790 torr?

Name _____ Date _____

Combined Gas Law Worksheet

Directions: Answer the following questions. Be sure to show your work and include units for any math problems.

- 1) A gas that has a volume of 28 liters, a temperature of 65°C , and an unknown pressure has its volume increased to 36 liters and its temperature decreased to 35°C . If I measure the pressure after the change to be 2.0 atm, what was the original pressure of the gas?
- 2) You have 56.7 mL of a gas. Its temperature changes from 290.1 K to 303.7 K. Its pressure changes from 682.7 mmHg to 700.3 mmHg. What is the new volume?
- 3) A sample of hydrogen gas is cooled from 65°C to 39°C and the volume changes from 20 mL to 41 mL. What was the original pressure if the final pressure was 2.2 atm?
- 4) If I have 3.9 L of gas at a pressure of 5.0 atm and a temperature of 50.0°C , what will be the temperature of the gas if I decrease the volume of the gas to 2.4 L and decrease the pressure to 303.0 kPa?
- 5) Determine the original temperature of a gas that had a volume change of 120 mL to 80 mL and a pressure change of 820 torr to 750 torr. The final temperature of the gas was 80°C

Name _____ Date _____

Dalton's Law of Partial Pressure Worksheet

Directions: Solve each of the following problems below. Be sure to show your work and include units.

- 1) A container holds three gases: oxygen, carbon dioxide, and helium. The partial pressures of the three gases are 2.00 atm, 3.00 atm, and 4.00 atm, respectively. What is the total pressure inside the container?

- 2) If the total air pressure is 0.99 atm, the partial pressure of carbon dioxide is 0.05 atm, and the partial pressure of hydrogen sulfide is 0.02 atm, what is the partial pressure of the remaining air?

- 3) Oxygen and chlorine gas are mixed in a container with partial pressures of 401 mmHg and 0.639 atm, respectively. What is the total pressure inside the container (in atm)?

- 4) A 250.0 mL sample of hydrogen is collected over water at 20°C and 760.0 torr of pressure. What is the pressure of the dry gas? (Vapor pressure of water at 20°C is 17.5 torr)

- 5) A student collects oxygen gas by water displacement at a temperature of 16°C. The total volume is 188 mL at a pressure of 93.3 kPa. What is the pressure of the oxygen collected? (Vapor pressure of water at 16 C is 1.8 kPa).

Name _____ Date _____

Ideal Gas Law Worksheet

Directions: Answer the following questions. Be sure to show all work and include units.

- 1) How many moles of oxygen will occupy a volume of 2.5 liters at 1.2 atm and 25°C?

- 2) What volume will 2.0 moles of nitrogen occupy at 720 torr and 20°C?

- 3) At what temperature will 0.12 moles of nitrogen gas occupy a volume of 347 mL at a pressure of 6680 torr?

- 4) How many grams of sulfur gas will exert a pressure of 0.988 atm at a volume of 750 mL at 25 °C?

- 5) If I have 0.275 moles of gas at a temperature of 75 K and a pressure of 177.3 kPa, what is the volume of the gas?

- 6) At what pressure (in atm) will 11.9 grams of nitrogen occupy 2.5 L at 22°C?