Name: _____ **Off. Class:** _____ **Per:** _____ **Date:** _____

Teacher: _____ **Gas Law Homework** **Chemistry**

Directions: Use the space provided to show work AND explain your answers to each question. NO WORK/EXPLANATIONS = NO CREDIT

____ 1. Which set of values represents standard pressure and standard temperature?

A) 1 atm and 101.3 K
B) 1 kPa and 273 K
C) 101.3 kPa and 0°C
D) 101.3 atm and 273°C

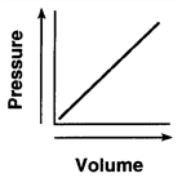
____ 2. Which temperature change would cause a sample of an ideal gas to double in volume while the pressure is held constant?

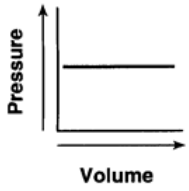
A) from 400. K to 200. K
B) from 200. K to 400. K
C) from 400.°C to 200.°C
D) from 200.°C to 400.°C

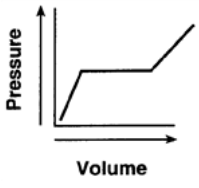
____ 3. A cylinder with a movable piston contains a sample of gas having a volume of 6.0 liters at 293 K and 1.0 atmosphere. What is the volume of the sample after the gas is heated to 303 K, while the pressure is held at 1.0 atmosphere?

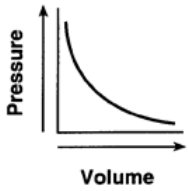
A) 9.0 L B) 6.2 L C) 5.8 L D) 4.0 L

____ 4. Which graph represents the relationship between pressure and volume for a sample of an ideal gas at constant temperature?

A)


B)


C)


D)


____ 5. A gas occupies a volume of 444 mL at 273 K and 79.0 kPa. What is the final kelvin temperature when the volume of the gas is changed to 1880 mL and the pressure is changed to 38.7 kPa?

A) 31.5 K B) 292 K
C) 566 K D) 2360 K

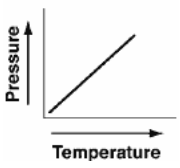
6. A sample of gas is held at constant pressure. Increasing the kelvin temperature of this gas sample causes the average kinetic energy of its molecules to

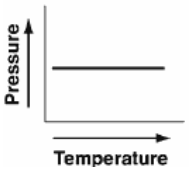
   A) decrease and the volume of the gas sample to decrease
   B) decrease and the volume of the gas sample to increase
   C) increase and the volume of the gas sample to decrease
   D) increase and the volume of the gas sample to increase

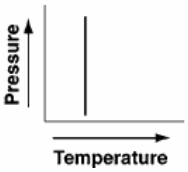
7. A sample of helium gas has a volume of 900. milliliters and a pressure of 2.50 atm at 298 K. What is the new pressure when the temperature is changed to 336 K and the volume is decreased to 450. milliliters?

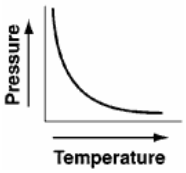
   A) 0.177 atm B) 4.43 atm
   C) 5.64 atm D) 14.1 atm

8. Which graph shows the pressure-temperature relationship expected for an ideal gas?

   A) 

   B) 

   C) 

   D) 

9. A 3.00-liter sample of gas is at 288 K and 1.00 atm. If the pressure of the gas is increased to 2.00 atm and its volume is decreased to 1.50 liters, the Kelvin temperature of the sample will be

   A) 144 K B) 288 K C) 432 K D) 576 K

10. As the temperature of a given sample of a gas decreases at constant pressure, the volume of the gas

    A) decreases B) increases
    C) remains the same