Gases Review Sheet Name _____

Directions: Show your work and identify the law used

1. A sample of argon gas is cooled and its volume went from 380 mL to 250 mL. If its final temperature was -55°C. What was its original temperature?

   Law_____

2. A gas at 1.2 atm and 32°C occupies a volume of 45 mL. What volume will the gas occupy at STP conditions?

   Law_____

3. A mixture of neon and argon gases exerts a total pressure of 2.39 atm. The partial pressure of the neon alone is 1.84 atm, what is the partial pressure of argon?

   Law_____

4. A container of nitrogen had a pressure of 3.2 atm at 33°C. What pressure would be necessary to decrease the temperature to 20°C?

   Law_____

5. What volume will 2.0 moles of nitrogen occupy at 720 torr and 20°C?

   Law_____

6. A sample of carbon dioxide occupies a volume of 3.5 liters at 125 kPa pressure. What pressure would the gas exert if the volume was decreased to 2.00 liters?

   Law_____

7. A sample of chlorine gas occupies a volume of 110 mL when the temperature is 44°C and the pressure is 1.9 atm. What would the volume be if the temperature rose to 61°C and the pressure increased to 2.4 atm?

   Law_____

8. Hydrogen gas was cooled from 150°C to 50°C. Its new volume is 75 mL. What was its original volume?

   Law_____

9. What would the pressure be for 0.09 moles of a gas that occupies 235 mL at a temperature of 50°C?

   Law_____

10. A sample of hydrogen at 1.5 atm had its pressure decreased to 0.50 atm producing a new volume of 750 mL. What was its original volume?

    Law_____

11. The total pressure in a closed container of three mixed gases is 96.4 kPa. The partial pressure of hydrogen in the mixture is 13.5 kPa and the partial pressure of oxygen is 29.3 kPa. The third gas in the mixture is methane, what is its partial pressure?

Law_____

12. Fluorine exerts a pressure of 900 torr. When the pressure is changed to 1.6 atm, its temperature is 50°C. What was the original temperature?

Law_____

13. What does STP stand for and what are the conditions?

14. Name 3 of the 5 assumptions of the Kinetic Molecular theory

15. When does a real gas behave most like an ideal gas?

16. Write all the pressure conversions

17. In gas law problems all temperatures must be found in _____.

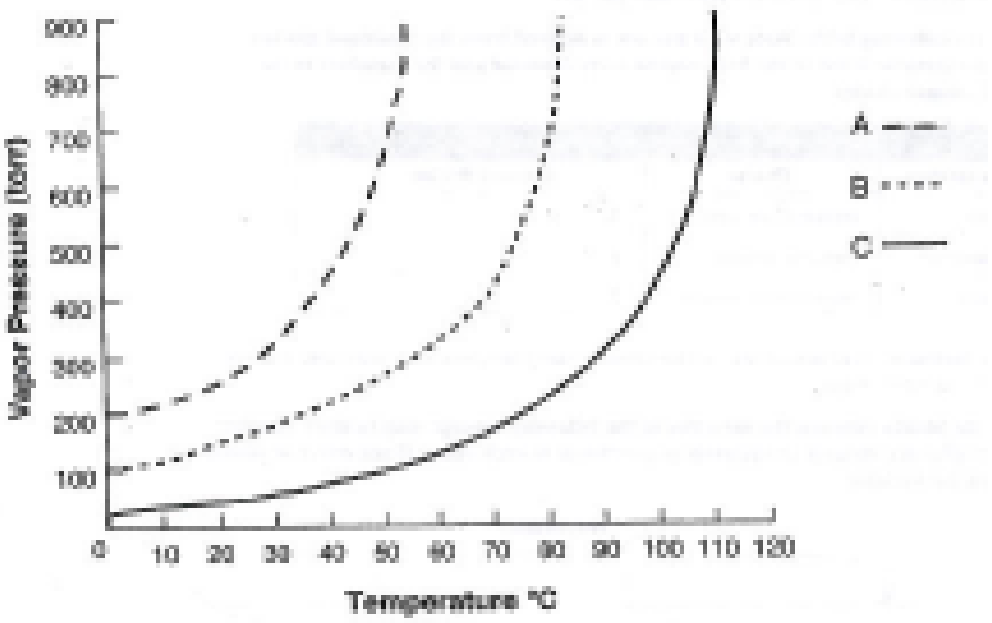
18. What would R be in an ideal gas equation that had the pressure units of kPa?

19. Compare and contrast effusion and diffusion. Use examples to help your comparisons.

20. What is a volatile substance? What does it mean to be a non volatile substance?

21. How are boiling and evaporation different?

22. Answer the following questions using the diagram below:



a. Which substance has the highest intermolecular forces?

b. Which substance has the lowest normal boiling point?

c. Which substance is the least volatile?

d. At what temperature will substance C boil at 500 torr?