Chemistry: Gas Laws Review   **Name** _____

Station 1: Jeopardy
Work in groups of 4 and form two teams of 2. Complete all 15 questions and keep score. Call me over to check you off when completed

Station 2: Story Problem
Solve the story problem at station 2. Hand in with poster (at station 3)

Station 3: Make a Poster
Work in pairs. Choose any of the gas laws we've discussed in class and create a visual representation of the gas law. You do not need to do any calculations for this—just show the qualitative relationship. Hand this in with your work from station 2.
When Done: Practice Test

Gas Laws Practice Test
1. Which Gas Law is involved when a balloon pops after being sat on?
   A. Charles Law
   B. Boyle's Law
   C. Law of Pressure Gradient
   D. None of the Above

2. As the volume of confined gas decreases at constant temperature, the pressure exerted by the gas
   _____.
   A. decreases
   B. increases
   C. stay the same
   D. fluctuates

3. Each of these flasks contains the same number of gas molecules. In which container is the pressure the highest?
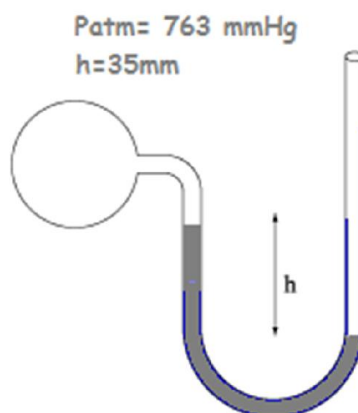

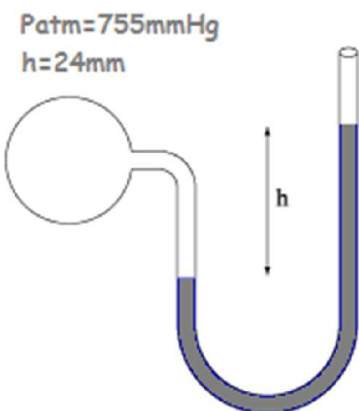Flask 1   Flask 2   Flask 3   Flask 4
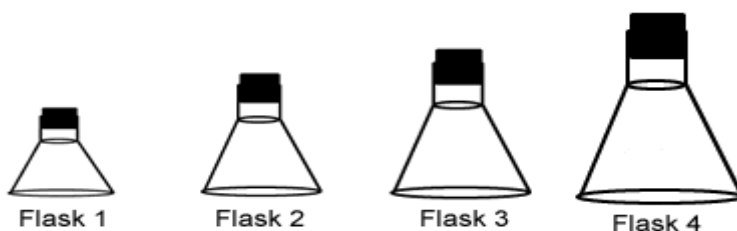
4. Each of these flasks is the same size and at the same temperature. Which one contains the most gas molecules?

1 atm   2 atm   3 atm   4 atm

Flask 1   Flask 2   Flask 3   Flask 4
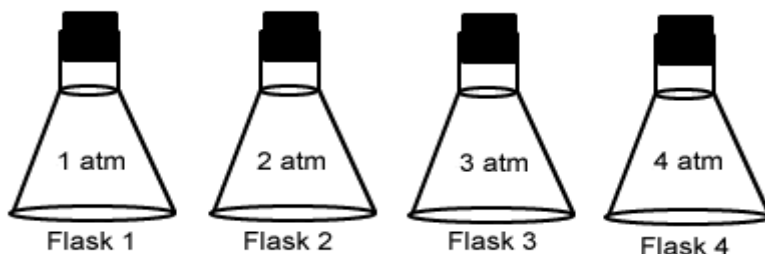
5. Assuming that the temperature remains constant. How can you increase the pressure of a gas?
   A. Increase the container volume
   B. Add more molecules of the gas
   C. Decreases the container volume
   D. None of the above

6. A sample of nitrogen gas has a volume of 500ml at a pressure of 0.971atm.What volume will the gas occupy at a pressure of 1.50 atm, assuming the temperature remains constant?
   A. 342mL
   B. 424mL
   C. 324mL
   D. 442mL
   E. 242mL

7. At a pressure of 5.0 atmospheres, a sample of gas occupies 40. liters. What volume will the same sample occupy at 1.0 atmosphere?
   A. 0.0050 L
   B. 0.13 L
   C. 200 L
   D. 8.0 L

8. In a closed container at 1.0 atmosphere, the temperature of a sample of gas is raised from 300 K to 400 K. What will be the final pressure of the gas?
   A. 0.010 atm
   B. 0 atm
   C. 100 atm
   D. 1.3 atm

9. At constant pressure and 25 °C a sample of gas occupies 4.5 liters. At what temperature will the gas occupy 9.0 liters?
   A. 596K
   B. 50K
   C. 50°C
   D. 596°C

10. When a supply of hydrogen gas is held in a 4 liter container at 320 K it exerts a pressure of 800 torr. The supply is moved to a 2 liter container, and cooled to 160 K. What is the new pressure of the confined gas?
    A. 800 torr
    B. 1600 torr
    C. 200 torr
    D. 400 torr

11. A small sample of helium gas occupies 6 mL at a temperature of 250 K. At what temperature does the volume expand to 9 mL?
    A. 125K
    B. 375K
    C. 500K
    D. 2250K

12. Organize the following gases in order of their rates of diffusion, from slowest to fastest (oxygen, O_2, ammonia, NH_3, hydrogen, H_2 and carbon dioxide, CO_2)
   A. hydrogen, oxygen, carbon dioxide, ammonia
   B. oxygen, hydrogen, carbon dioxide, ammonia
   C. hydrogen, ammonia, oxygen, carbon dioxide
   D. hydrogen, oxygen, ammonia, carbon dioxide
   E. carbon dioxide, oxygen, ammonia, hydrogen

13. Given the air pressure and the height of the liquid, determine the pressure of the gas inside each vessel

   Patm=755mmHg
   h=24mm

   h

14. What is the volume of 1 mole of any gas at STP? _____

15. What is STP? Provide an answer using at least two different units of pressure

16. A mixture of three gases A, B and C is at a total pressure of 8.15 atm. The partial pressure of gas A is 2.70 atm; that of gas B is 2.09atm. What is the partial pressure of gas C?

17. How many moles are contained in 2.5L of CO_2 at STP?

   Patm= 763 mmHg
   h=35mm

   r has a volume of 550.0mL at
   at temperature will its volume
   constant pressure?

   h

19. A sample of gas at 104°C and 0.870 atm occupies a volume of 3.0L. What volume would this gas occupy at 60°C and 1.7 atm?

20. What is the volume in liters of 2.00 mol of F_2 at 100 K and 152 kPa?

21. Calculate the number of moles of gas contained in 1.0L at 273K and 1.5 atm.

22. TRUE or FALSE. According to Charles Law, if you have a balloon inside a car at noon during a hot summer day the balloon molecules inside will increase in pressure. Explain.