

Homework #12

Name: _____

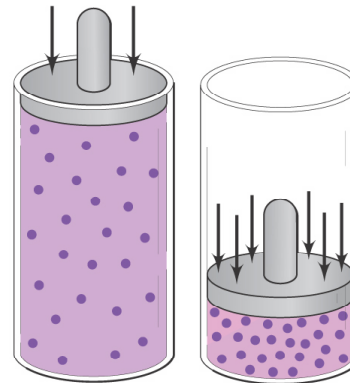
Student ID: _____

Chem 192 – Spring 2010
Cañada College

Total Possible Points: 20
Due Tuesday May 4th

Suggested chapter 12 problems: 4, 8, 10, 14, 18, 26, 30, 38, 44, 48

1. (2 pts) Using the KMT model of gases, explain why pressure increases when the volume of a gas is decreased (at constant temperature).



2. (4 pts) A gas sample occupies 1.20 L at 652 torr. What volume does the gas occupy at each of the following pressures? (reminder: 760 torr = 760 mmHg = 1 atm)

(a) 970 mmHg

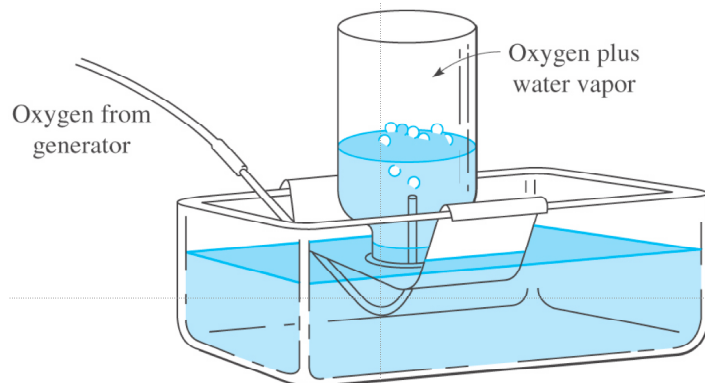
(b) 2.7 atm

3. (2 pts) If 16.5 L of hydrogen gas is cooled from 125° C to 10.0 °C at a constant pressure, what volume will it occupy?

4. (2 pts) A sealed container of nitrogen gas is heated from 17° C to 55° C. If the container was initially at a pressure of 565 torr, what is the pressure after heating?

5. (2 pts) A sample of gas at 25 °C has a volume of 4.0 L at 680 torr. The sample is compressed to 1.0 L by applying a force of 980 torr, what is the final temperature of the sample?

6. (2 pts) What is the partial pressure of oxygen collected over water at 23 °C and 1atm?
(Note: The partial pressure of water at 23 °C is 21.2 torr. PS – yes it's that easy.)



7. (2 pts) A sample of 17.5 L of chlorine gas is collected at STP. How many molecules of chlorine gas are in the sample?

8. (2 pts) A mixture of 4.00 moles of Cl_2 gas and 1.50 moles of H_2 gas is collected at 25 °C and 1.20 atm. What volume does the mixture occupy?

9. (2 pts) At STP 5.4 L of ammonia gas reacts with excess oxygen gas in the following reaction. How many grams of nitrogen monoxide are formed?

