Chapter 14: Ideal gas law practice wksht

Name ______

Some of the problems below can be solved multiple ways. Use the ideal gas law to solve.

- 1. Calculate the volume (in L) of oxygen gas collected at STP if the sample has a mass of 2.67g.
- 2. Calculate the volume (in dm³) of 101 grams of neon gas collected at STP.
- 3. 75.6 dm³ of sulfur dioxide gas is collected at STP. What is its mass?
- 4. How many moles of gas will occupy a 562 cm³ flask at -15.0⁰ C and 88.7 kPa pressure?
- 5. What volume will be occupied by 0.766 mol of gas at 106 kPa and 15.5°C?
- 6. A 759 cm³ vessel contains 0.0925 mol of a gas at 98.6 kPa. What is its temperature (in K)?

For the following problems, you will need to write and balance the equation, then use values to solve with the ideal gas law.

7. 16.7 grams of magnesium reacts with excess hydrochloric acid at STP. How many liters of hydrogen gas are produced?

8. 75.0 grams of calcium carbonate decomposes into carbon dioxide and calcium oxide, how many dm³ of carbon dioxide are made at STP?

9. Excess chlorine gas reacts with 3.45 dm³ of hydrogen gas to produce how many grams of hydrochloric acid at STP?