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| *Son of Gas volume and limiting reagent*  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues &Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. What does STP stand for?
2. At STP what is the pressure? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. At STP what is the temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Describe all gases at STP, by filling in the blanks:

\_\_\_\_\_\_\_\_\_\_ moles of gas at STP = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ liters of gas

1. 2. A 90.0 mL volume of helium was collected under a pressure of 740 mmHg. At what volume would the pressure of this gas be 700 mm Hg? Assume temperature is constant.
2. A small bubble rises from the bottom of a lake, where the temperature is 8˚C and the pressure is 6.4 atm, to the water’s surface, where the temperature is 25˚C and pressure is 1.0 atm. Calculate the final volume (in mL) of the bubble if its initial volume was 2.1 mL.
3. Determine the volume in liters of carbon dioxide that should be produced in the reaction between 100. g of carbon and 100. liters of O2. (Use the same three steps as in the previous problem above).
4. Suppose 10.61 g of calcium was allowed to react with 8.61 liters of HCl gas to produce calcium chloride and hydrogen gas.
   1. What is the balanced equation?
   2. Which reactant is limiting? (Show both calculations.)
   3. Using the limiting reactant, solve for how many liters of hydrogen gas will form at Standard Temperature and Pressure.
5. Suppose 55.00 L of nitrogen gas and 103.00 L of hydrogen gas are mixed and reacted to form ammonia (NH3). Calculate the volume in liters of ammonia produced when this reaction runs to completion.
6. Gold (III) sulfide can react with fluorine to form gold(I) fluoride gas and S8. Write a balanced reaction and then find how many liters at STP of AuF will form if you have 333.3 grams Gold (III) sulfide and 7.1 liters fluorine.