Stoichiometry Worksheet #2 **ON YOUR OWN SHEET OF PAPER!!!**

1) Balance the chemical equation and use it to solve for the following problems:

$$Al_{(s)} + H_2SO_{4(aq)} \rightarrow$$

a. If 58.83 g of Aluminum is completely reacted, how many grams of Hydrogen sulfate are needed? *(320.3g H_2SO_4)*
b. If 45.60 L of Hydrogen gas forms at STP, what mass of Hydrogen sulfate was used? *(199.5g H_2SO_4)*
c. How many grams of Aluminum were needed to produce 107.72 g of Aluminum sulfate? *(17.008g Al)*
d. What volume of hydrogen gas will be produced @ STP from the complete rxn of 36.1g of Aluminum? *(44.9 L H_2)*

2) Balance the chemical equation and use it to solve for the following complete combustion:

$$C_5H_{11(s)} + O_{2(g)} \rightarrow$$

a. If 180.3 g of C_5H_{11} is burned how many Liters of CO_2 are produced? *(284.4 L CO_2)*
b. If 63.4 Liters of carbon dioxide gas forms at STP, how many Liters of oxygen were used? *(98.3 L O_2)*
c. How many grams of oxygen gas were needed to produce 24.5 grams of water vapor? *(61.4 g O_2)*
d. What mass of C_5H_{11} when burned will produce 74 grams of H_2O vapor? *(53 g C_5H_{11})*

3) Balance the chemical equation and use it to solve for the following problems:

$$NH_{3(g)} + O_{2(g)} \rightarrow NO_{(g)} + H_2O_{(l)}$$

a. How many grams of NO were needed to produce 30.2 g of water? *(33.6 g NO)*
b. What volume of O_2 gas is required to produce 34.0 Liters of NO? *(42.5 L O_2)*
c. If 115.3 g of water were produced, how many grams of Ammonia were used? *(72.60 g NH_3)*
d. We want to collect 5 Liters of water, what volume of Ammonia will we need to start with? *(4000 L NH_3)*

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