Gas Stoichiometry
Worksheet #1

Directions: *Use your gas laws and conversions to solve the following problems. Your Mole Highway handout will help!*

Q	Work	Answer with Units!
1	Given the balanced reaction: $2C_6H_{6(l)} + 15O_{2(g)} \rightarrow 12CO_{2(g)} + 6H_2O_{(g)}$ What volume of oxygen gas at STP is needed to completely react with 10.0 g of benzene, C_6H_6?	
2	Given the balanced reaction: $P_{4(s)} + 6H_{2(g)} \rightarrow 4PH_{3(g)}$ What volume of PH_3 gas at 27.0^{o}C and 753 mmHg is produced when 21.2 g of hydrogen gas react with phosphorus?	
3	Given the balanced reaction: $Mg_3N_{2(s)} + 3H_2O_{(l)} \rightarrow 3MgO_{(s)} + 2NH_{3(g)}$ What volume of ammonia is produced when 2.50 g of magnesium nitride reacts at STP?	
4	Given the <u>unbalanced</u> reaction: $Na_{(s)} + H_2O_{(l)} \rightarrow NaOH_{(aq)} + H_{2(g)}$ If 0.500 g of sodium reacts with water, what volume of hydrogen gas will be produced at 25.0^{o}C and 765 mmHg?	
5	Given the <u>unbalanced</u> reaction: $AlCl_{3(aq)} + F_{2(g)} \rightarrow AlF_{3(aq)} + Cl_{2(g)}$ If 12.5 L of fluorine at STP reacts with aluminum chloride, what mass of aluminum fluoride will be produced?	

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