

Gas Stoichiometry Worksheet #2

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

Q	Work	Answer with Units!
1	How many grams of H ₂ O do you need to produce 1 L of O ₂ gas at STP? (use the decomposition equation of water to hydrogen and oxygen)?	
2	Quicklime (CaO) is produced by the thermal decomposition of calcium carbonate (CaCO ₃). Calculate the volume of CO ₂ at STP produced from the decomposition of 152 g CaCO ₃ by <u>unbalanced</u> reaction: $\text{CaCO}_3(\text{s}) \rightarrow \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$	
3	Given the balanced reaction $2\text{Al}(\text{s}) + 2\text{OH}^- + 6\text{H}_2\text{O} \rightarrow 3\text{H}_2 + 2[\text{Al}(\text{OH})_4]^-$ How many grams of aluminum do you need to make a 0.500 L of hydrogen gas using the equation above?	
4	Given the <u>unbalanced</u> reaction: $\text{N}_{2(\text{g})} + \text{Cl}_{2(\text{g})} \rightarrow \text{NCl}_3$ What volume of chlorine gas at 27.0 °C and .987atm is needed to completely react with 500.0 ml of nitrogen gas at 27.0°C and 770 mmHg.	
		p. 118B