## Limiting Reactant \& Percent Yield

Name: $\qquad$
1a) Hydrochloric acid $(\mathrm{HCl})$ and sodium hydroxide combine to produce sodium chloride and water. Suppose 18 g of sodium hydroxide was combined with 18 g of hydrochloric acid. How many grams of water should be made?
b) If the above reaction were conducted and 7.9 g of water were produced, what is the percent yield?

2a) Calcium metal will replace silver in silver (I) nitrate to yield calcium nitrate and silver metal. 30 g of silver nitrate combines with 4.2 g of calcium. How many grams of silver should be made?
b) What is the percent yield if 18.7 grams of silver are actually made when performing the experiment?
3) Hydrogen gas and oxygen gas are ignited to form water. What is the percent yield if 150 g of water is produced from mixing 200 g of oxygen gas with 300 L of hydrogen?

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Name: $\qquad$
1a) When ethane $\left(\mathrm{C}_{2} \mathrm{H}_{6}\right)$ is burned in the presence of oxygen gas, carbon dioxide and water are produced. How many grams of water can be made from mixing 1.0 g of ethane with 3.0 L of oxygen?
b) If 1.7 g of water are measured out when conducting the reaction, what is the percent yield?

2a) Calcium oxide and carbon dioxide are combined to form limestone $\left(\mathrm{CaCO}_{3}\right)$. How many grams of calcium carbonate should be produced when 19.6 g of CaO is combined with 9.7 L of $\mathrm{CO}_{2}$ ?
b) 37.2 g of $\mathrm{CaCO}_{3}$ is made when the above reaction is performed. What is the percent yield?
3) 4.12 g of sodium chloride reacts with 6.35 g of silver nitrate to form sodium nitrate and silver chloride. What is the percent yield of the reaction if 3.05 g of sodium nitrate are produced?

Answers:
1a) 1.8 grams water
2b) $106 \%$
3) $96.1 \%$

