**Stoichiometry Practice Problems Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Honors Chemistry**

1. The octane (C8­H18) present in gasoline burns according to the following equation:

2 C8H18(aq) + 25 O2(g) 🡪 16 CO­2(g) + 18 H2O(l)

How many moles of O2 are needed to react fully with 4.00 moles of octane?

1. The combustion of a sample of butane (C4H10) produced ***2.46 g of water***.  
   Balanced equation: 2 C4H10(l) + 13 O2(g) 🡪 8 CO2(g) + 10 H2O(g)  
   How many moles of CO2 are formed?
2. Calculate how many grams of iron can be made from 16.5 moles of Fe2O3 by the following equation: 1 Fe2O3 + 3 H2 🡪 2 Fe + 3 H2O
3. Sodium hydroxide pellets were dissolved in water. If it takes 45.10 mL of 0.25M HCl to neutralize the sodium hydroxide, what was the mass of sodium hydroxide used?

Balanced Equation: NaOH + HCl **→** NaCl + H2O

1. \_\_\_\_\_ CaO + \_\_\_\_\_ H2O 🡪 \_\_\_\_\_ Ca(OH)2

4.44 g of calcium oxide and 7.77 g of water are available to react

* 1. How many grams of calcium hydroxide will be formed in this reaction?
  2. Identify the limiting and excess reactants.
  3. What is the percent yield if the experiment yields 4 grams of product?