Section 9.1 - 9.2  Complete the following assignment in your class notebook with the heading: **Stoichiometry**

1.) Copy the following balanced chemical equation and use it to answer the questions below: \( \text{Br}_2 + 2\text{NaI} \rightarrow 2\text{NaBr} + \text{I}_2 \)
   a. How many moles of sodium bromide could be produced from 0.172 moles of bromine?
   b. How many grams of sodium iodide are required to produce 28.2 grams of iodine
   c. How many grams of bromine are required to react with 98.2 grams of sodium iodide?

2.) Copy the following balanced chemical equation and use it to answer the questions below: \( 4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3 \)
   a. How many moles of oxygen will react with 3.64 moles of iron?
   b. How many moles of iron are used to produce 4.10 moles of iron (III) oxide?
   c. How many grams of iron (III) oxide are produced from 75.0 grams of iron?
   d. How many grams of iron (III) oxide are produced from 36.0 grams of oxygen?

3.) Copy the following balanced chemical equation and use it to answer the questions below: \( \text{C}_2\text{H}_5\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O} \)
   a. How many moles of ethanol (\( \text{C}_2\text{H}_5\text{OH} \)) will react with 15.8 grams of oxygen?
   b. How many grams of \( \text{CO}_2 \) are produced from 6.70 grams of oxygen?
   c. How many grams of carbon dioxide are produced from 12.0 grams of ethanol?

4.) Hydrogen gas and oxygen gas react to form water.
   a. Write a balanced chemical equation for this synthesis reaction (phases not needed).
   b. How many grams of water can be produced from 9.18 grams of oxygen.
   c. How many grams of oxygen are required to react completely with 7.20 grams of hydrogen.

5.) When water is added to calcium carbide, \( \text{CaC}_2 \), the products are acetylene, \( \text{C}_2\text{H}_2 \), and calcium hydroxide.
   a. Write a balanced chemical equation for this reaction (phases not needed).
   b. How many moles of water are used to produce 1.84 moles of acetylene?
   c. How many grams of calcium carbide are required to produce 6.00 grams of calcium hydroxide.
   d. How many grams of water are required to produce 6.00 grams of calcium hydroxide?
   d. How many grams of water are required to produce 6.00 grams of acetylene?