

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?