Name:_____ Date:_____ Class:_____

Chemistry- Chapter 9
Limiting Reactants- No excess reactant

1. Zinc and sulfur react to form zinc sulfide.
    a. Write the balanced chemical equation.

    b. If 2.00 mol of zinc are heated with 1.00 mol of sulfur, identify the limiting reactant.

2. Metallic magnesium reacts with steam to produce magnesium hydroxide and hydrogen gas.
    a. Write the balanced chemical equation.

    b. If 16.2 g magnesium are heated with 12.0 g water, what is the limiting reactant?

3. 2.50 mol of copper (II) and 5.50 mol of silver nitrate are available to react by single displacement.
    a. Write the balance chemical equation.

    b. Determine the limiting reactant.

4. If 862 g $ZrSiO_4$ and 950 g of Cl_2 react, what is the limiting reactant?
    $ZrSiO_4 + \quad Cl_2 \rightarrow \quad ZrCl_4 + \quad SiO_2 + \quad O_2$

5. Aluminum undergoes a synthesis reaction with oxygen.
    a. Write the balanced chemical equation.

    b. If 3.17 g aluminum and 2.55 g oxygen are available, what is the limiting reactant?

6. Copper (II) sulfide reacts with oxygen gas to form copper (II) oxide and sulfur dioxide.
    a. Write the balanced chemical equation.

    b. If 100 g of copper (II) sulfide and 56 g of oxygen are available, what is the limiting reactant?

7. Magnesium iodide and bromine undergo a single displacement reaction.
    a. Write the balanced chemical equation.

    b. If 560 g of magnesium iodide reacts with 360 g of bromine, what is the limiting reactant?

8. Copper (II) sulfate reacts with iron (III) in a single displacement reaction.
    a. Write the balanced chemical equation.

    b. If you place 0.092 mol of iron filings in a solution of 0.158 mol of copper (II) sulfate, what is the limiting reactant?