Chem 1 Hour\_\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Dr. Wexler  
Understanding the Parts of a Chemical Equation (12pts)  
Date:

The balanced equation below is an example of a chemical equation.

FeCl3 + 3NH4OH 🡪 Fe(OH)3 + 3NH4Cl

**1. Understanding the difference between reactants and products**

A. Reactants – a reactant is what you start with. It is changed by the reaction to something else. Reactants are like the ingredients in a recipe for making chocolate chip cookies (the product).

Q1. Circle the two reactants in the above example:  
Fe NH4OH  
Fe(OH)3 H  
FeCl3 ONH4 NH4Cl  
OH Cl

B. Products – a product is what you end up with after the reactants react with each other chemically. A product is like a chocolate chip cookie made by combining ingredients (reactants) such as sugar, flour, and chocolate.

Q2. Circle the two products in the above example:  
Fe NH4OH  
Fe(OH)3 H  
FeCl3 ONH4 NH4Cl  
OH Cl

Q3. Write a general rule for recognizing which are the reactants and which are the products in a chemical equation:

**2. Understanding the parts of a single replacement reaction**

Most commonly, a metal element replaces a different metal in an ionic compound. That is, they compete for the nonmetal anion. The loser is displaced and becomes pure metal.

For example: Al + CuCl2 🡪 AlCl3 + Cu (The loser here is Cu)

Q4. Which metal is more reactive in the above example, Al or Cu? (Hint: It only makes sense that the one that replaces the other has to be the more reactive element). \_\_\_\_\_\_\_\_\_\_\_

Q5. Which element, Al or Cu, is a pure metal reactant?\_\_\_\_\_\_

Q6. Which element, Al or Cu, is a pure metal product?\_\_\_\_\_\_

Q7. Which salt, CuCl2 or AlCl3, is a reactant?\_\_\_\_\_\_\_\_\_\_\_

Q8. Which salt, CuCl2 or AlCl3, is a product? \_\_\_\_\_\_\_\_\_\_\_

Q9. Explain what the subscript tells you?

Q10. Explain why the subscript for Cl changes: