Name _____

Chem V20 Reactions Practice 4 and Stoichiometry Ver B

1a. What is an ionic equation?

---

b. What is a spectator ion?

_____

c. What is a net ionic equation?

_____

2. For each of the following, first balance the equation. Then write out **(cie)** the complete ionic equation and (**nie)** the net ionic equation. Make sure your balanced equation has the right states - (aq)'s, (s)'s, (l)'s and (g)'s. If the states are not given, you will need to determine them.

for each.

a) ___$AgNO_3(aq)$ + ___ $CaCl_2(aq)$ ----> ___ $AgCl_{(s)}$ + ___ $Ca(NO_3)_{2(aq)}$

cie) _____

nie) _____

b) ____ $KI_{(aq)}$ + ___ $Pb(NO_3)_{2(aq)}$ ---> ___ $PbI_{2\ (s)}$ + ___ $KNO_{3\ (aq)}$

cie) _____

nie) _____

c) ____ Na_2CO_3 (___) + ___ $Ca(OH)_2$(___) ---> ___ NaOH (___) + ___ $CaCO_3$ (___)

cie) _____

nie) _____

d. NaOH (___) + HNO_3 (___) → H_2O(___) + $NaNO_3$ (___)

cie) _____

nie) _____

3. Write in the formulae for the products in the following acid- base reactions and then balance them.

a. $Ca(OH)_2$ + HCl →

b. $Be(OH)_2 + H_2SO_4$ →

c. HBr + $Fe(OH)_3$ →

d. $Mg(OH)_2$ + H_3PO_3 →

Chapter 8 Stoichiometry

1. Consider the following balanced reaction the represents the combustion of propane (C_3H_8):

$$C_3H_8 + 5\ O_2 \rightarrow 3\ CO_2 + 4\ H_2O$$

a. How many moles of O_2 are required to react with 94.0 moles of C_3H_8?

b. How many moles of CO_2 will be produced if 0.725 moles of O_2 are used in this reaction?

2. Consider the following **unbalanced** reaction.

$$Fe + H_2SO_4 \rightarrow Fe_2(SO_4)_3 + H_2$$

a. How many moles of H_2SO_4 are required to react with 3.6 moles of Fe?

b. How many moles of $Fe_2(SO_4)_3$ will be formed if 0.0351 moles of H_2SO_4 are used in the reaction?

3. Consider the following balanced reaction

$$4\ FeCr_2O_7 + 8\ K_2CO_3 + \_O_2 \rightarrow\ 2\ Fe_2O_3 + 8\ K_2CrO_4 + 8\ CO_2$$

a. How many grams of $FeCr_2O_7$ are required to produce 71.0 g of K_2CrO_4?

b. How many grams of O_2 are required to produce 4.55 g of Fe_2O_3?

c. If 625 g of K_2CO_3 react, how many grams of O_2 will be consumed in the reaction?

4. Given the balanced equation:

$$2HCl + Na_2SO_4 \rightarrow\ 2NaCl + H_2SO_4$$

If you start with 41 grams of hydrochloric acid, how many grams of sulfuric acid will be produced?

5. Using the following equation:

$$2\ NaOH + H_2SO_4 \rightarrow 2\ H_2O + Na_2SO_4$$

How many grams of sodium sulfate will be formed if you start with 135 grams of sodium hydroxide and 175 grams of sulfuric acid? Be sure to identify the limiting reactant.

6. Using the following equation:

$$4\ HBr + O_2 \rightarrow 2H_2O + 2\ Br_2$$

a. When 35.1 g of HBr reacts with 28.2 g of O_2, how many grams of H_2O will be produced?

b. If 2.9 g of H_2O are actually produced, what is the percent yield?