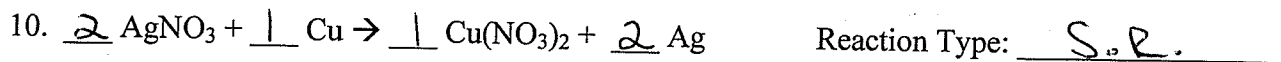
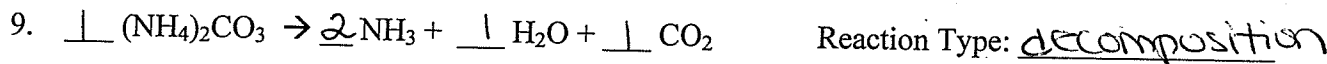
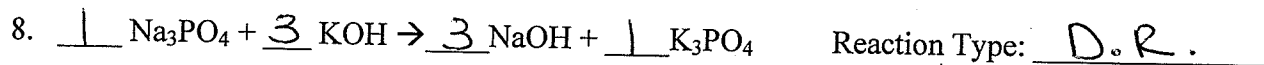
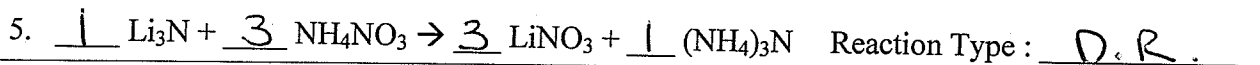
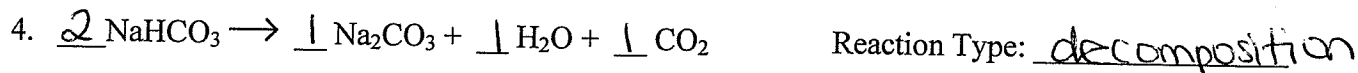
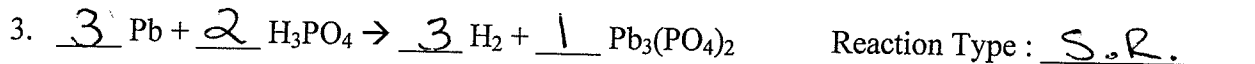
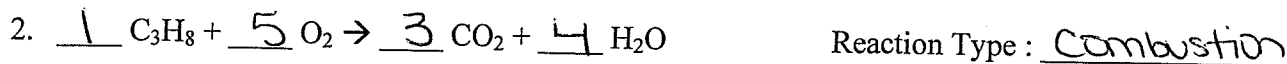
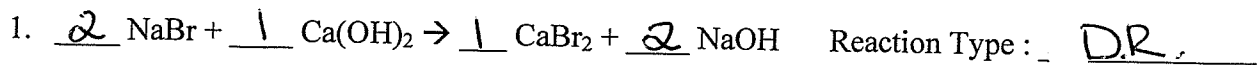


Key

Period: _____

Unit 8 Review: Reactions and Stoichiometry

Part 1: Balance the following equations and identify the type of reaction.

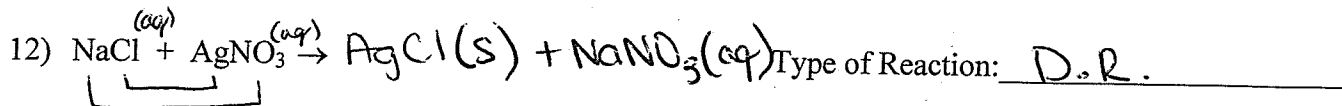


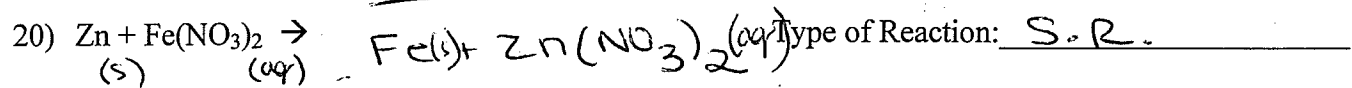
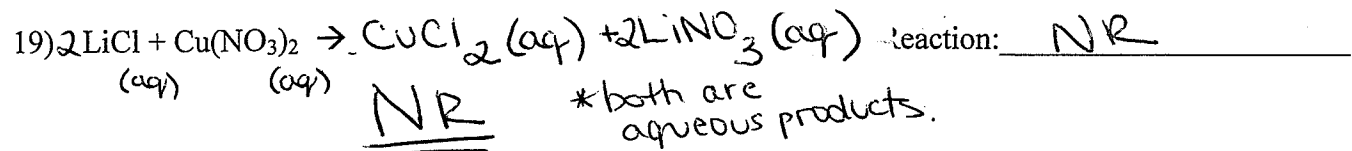
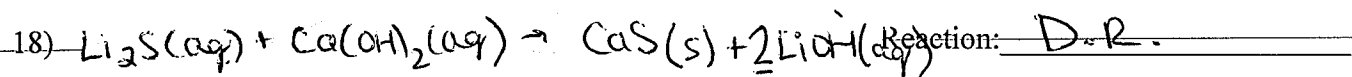
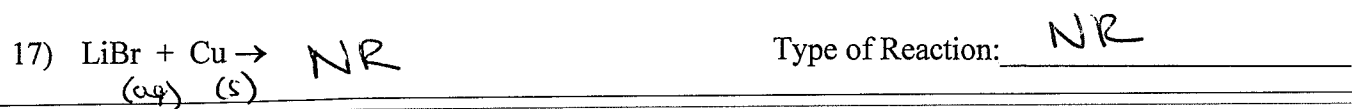
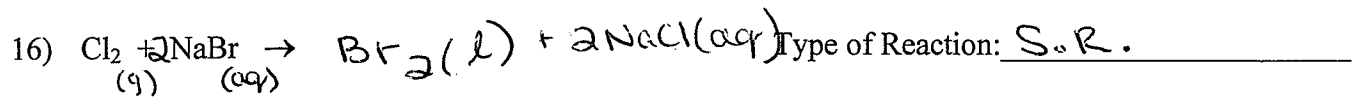
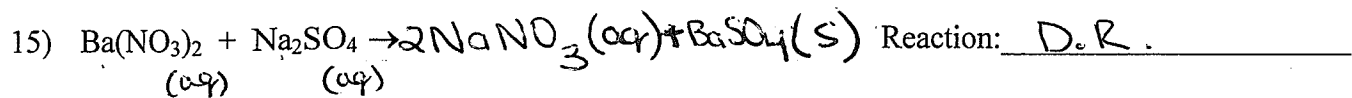
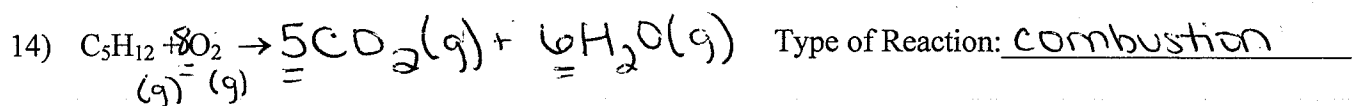
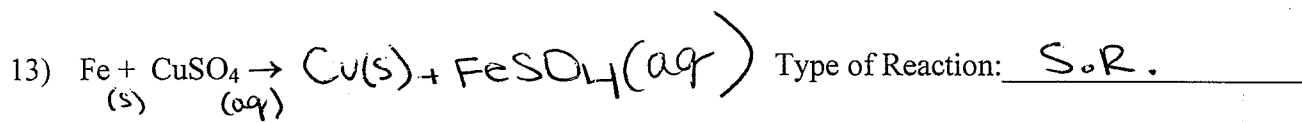
Part 2: For each of the following reactions:

a. Complete the reaction (Put NR if no reaction takes place)

b. Balance the reaction

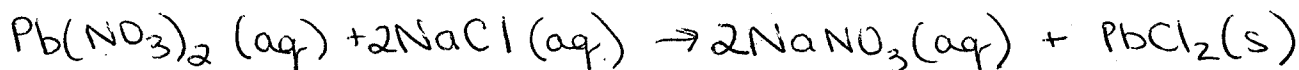
c. Identify the type of reaction



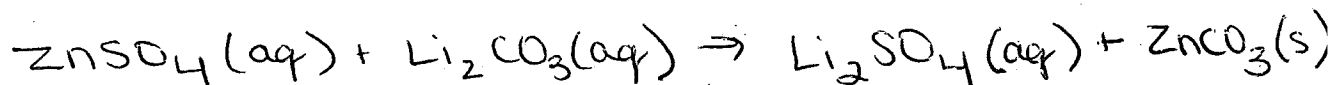


Part 3: Write a balanced equation for the reactions described below.

21) aqueous solutions of lead (II) nitrate is added to sodium chloride

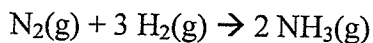


22) zinc sulfate is added to lithium carbonate

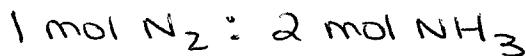


dry Review:

Consider the following reaction assuming it occurs at STP:



- a. What is the mole ratio of N_2 to NH_3 ?



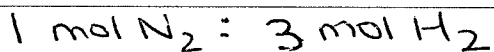
- b. How many moles of NH_3 are formed when 4 mol N_2 completely react?

$$4 \text{ mol N}_2 \times \frac{2 \text{ mol NH}_3}{1 \text{ mol N}_2} = \boxed{8 \text{ mol NH}_3}$$

- c. How many moles of N_2 are consumed when 10 mol NH_3 are produced?

$$10 \text{ mol NH}_3 \times \frac{1 \text{ mol N}_2}{2 \text{ mol NH}_3} = \boxed{5 \text{ mol N}_2}$$

- d. What is the mole ratio of N_2 to H_2 ?



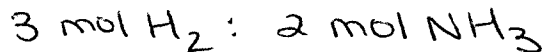
- e. How many moles of H_2 are consumed when 3 mol N_2 completely react?

$$3 \text{ mol N}_2 \times \frac{3 \text{ mol H}_2}{1 \text{ mol N}_2} = 9 \text{ mol H}_2$$

- f. How many moles of N_2 are consumed when 0.75 mol H_2 completely react?

$$0.75 \text{ mol H}_2 \times \frac{1 \text{ mol N}_2}{3 \text{ mol H}_2} = 0.25 \text{ mol N}_2$$

- g. What is the mole ratio of H_2 to NH_3 ?



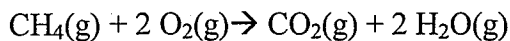
- h. How many grams of NH_3 are produced when 12 g H_2 completely react?

$$12 \text{ g H}_2 \times \frac{1 \text{ mol H}_2}{2.0 \text{ g H}_2} \times \frac{2 \text{ mol NH}_3}{3 \text{ mol H}_2} \times \frac{17.0 \text{ g NH}_3}{1 \text{ mol NH}_3} = \boxed{68 \text{ g NH}_3}$$

- i. How many grams of H_2 are required to produce 8.5g NH_3 ?

$$8.5 \text{ g NH}_3 \times \frac{1 \text{ mol NH}_3}{17.0 \text{ g NH}_3} \times \frac{3 \text{ mol H}_2}{2 \text{ mol NH}_3} \times \frac{2.0 \text{ g}}{1 \text{ mol H}_2} = \boxed{1.5 \text{ g}}$$

2) Consider the following reaction assuming it occurs at STP:



a. What is the mole ratio of CH_4 to H_2O ?



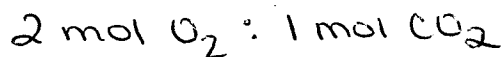
b. How many moles of H_2O are formed when 5 mol CH_4 completely react?

$$5 \text{ mol CH}_4 \times \frac{2 \text{ mol H}_2\text{O}}{1 \text{ mol CH}_4} = 10 \text{ mol H}_2\text{O}$$

c. How many moles of CH_4 are consumed when 0.4 mol H_2O are produced?

$$0.4 \text{ mol H}_2\text{O} \times \frac{1 \text{ mol CH}_4}{2 \text{ mol H}_2\text{O}} = 0.2 \text{ mol CH}_4$$

d. What is the mole ratio of O_2 to CO_2 ?



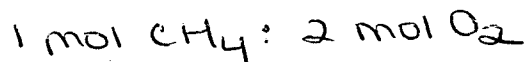
~~e. How many moles of O_2 are consumed when 3 mol CO_2 are produced?~~

~~$$3 \text{ mol CO}_2 \times \frac{2 \text{ mol O}_2}{1 \text{ mol CO}_2} = 6 \text{ mol O}_2$$~~

f. How many moles of CO_2 are produced when 0.50 mol O_2 completely react?

$$0.50 \text{ mol O}_2 \times \frac{1 \text{ mol CO}_2}{2 \text{ mol O}_2} = 0.25 \text{ mol CO}_2$$

g. What is the mole ratio of CH_4 to O_2 ?



h. How many grams of CH_4 will react completely with 16 g O_2 ?

$$16 \text{ g O}_2 \times \frac{1 \text{ mol O}_2}{32 \text{ g O}_2} \times \frac{1 \text{ mol CH}_4}{2 \text{ mol O}_2} \times \frac{16 \text{ g CH}_4}{1 \text{ mol CH}_4} = 4.0 \text{ g CH}_4$$

i. How many grams of O_2 are required to react with 6.4 g CH_4 ?

$$6.4 \text{ g CH}_4 \times \frac{1 \text{ mol CH}_4}{16.0 \text{ g CH}_4} \times \frac{2 \text{ mol O}_2}{1 \text{ mol CH}_4} \times \frac{32 \text{ g O}_2}{1 \text{ mol O}_2} = 26 \text{ g}$$

j. What is the mole ratio of CO_2 to H_2O ?

