

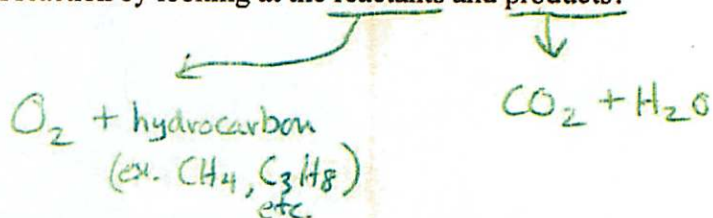


5) Describe the difference between a synthesis and a decomposition reaction.

Synthesis  $\rightarrow$  2 substances combine to form a single product

decomposition  $\rightarrow$  one reactant breaks down to form 2 or more products

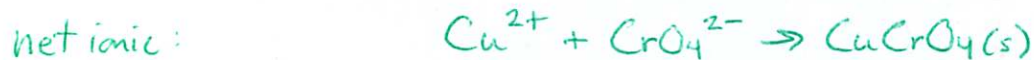
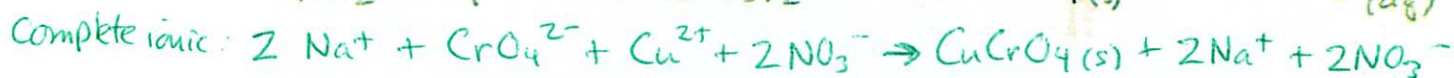
6) How can you identify a combustion reaction by looking at the reactants and products?



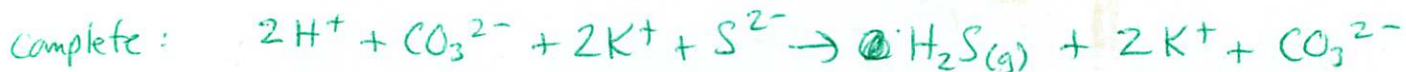
7) Identify the reactions below as single or double displacement, decomposition, synthesis, or combustion:

- a)  $\text{Mg} + \text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$  SD
- b)  $\text{Na} + \text{MgF}_2 \rightarrow \text{NaF} + \text{Mg}$  SD
- c)  $\text{Cl}_2 + \text{KI} \rightarrow \text{KCl} + \text{I}_2$  SD
- d)  $\text{NaCl} \rightarrow \text{Na} + \text{Cl}_2$  Decomp
- e)  $\text{Na} + \text{O}_2 \rightarrow \text{Na}_2\text{O}$  Synthesis
- f)  $\text{Na} + \text{HCl} \rightarrow \text{H}_2 + \text{NaCl}$  SD
- g)  $\text{K} + \text{Cl}_2 \rightarrow \text{KCl}$  Synthesis
- h)  $\text{Ca} + \text{O}_2 \rightarrow \text{CaO}$  Synthesis
- i)  $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2$  Decomp
- j)  $\text{N}_2 + 3\text{H}_2 \rightarrow \text{NH}_3$  Synthesis
- k)  $\text{Cu}_2\text{O} + \text{C} \rightarrow \text{Cu} + \text{CO}_2$  SD
- l)  $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$  combustion

c) sodium chromate + copper (II) nitrate → copper(II) chromate + sodium nitrate



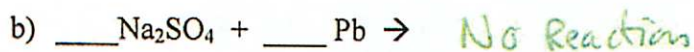
d) carbonic acid + potassium sulfide →



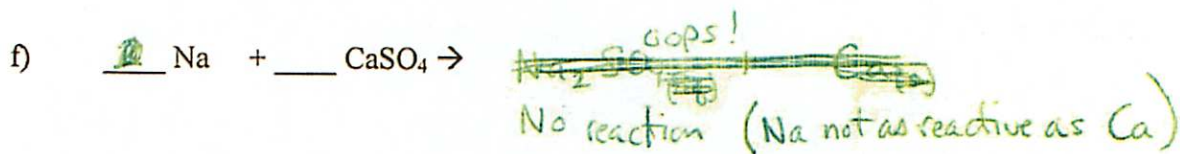
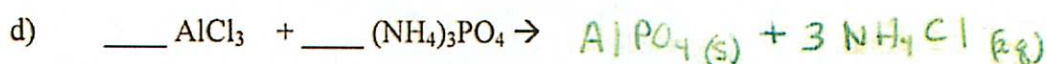
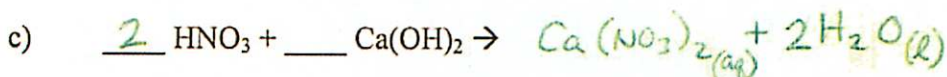
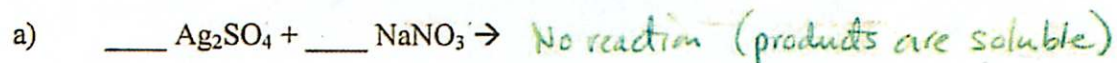
e) nitrous acid + barium hydroxide →



4) Balance and determine the products for the following single displacement reactions:



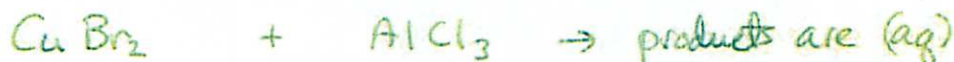
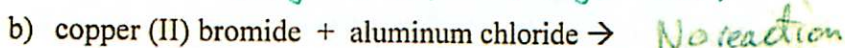
2) Determine the type of reaction shown and predict the products of each. If the reaction does occur, balance it. If a reaction will not occur, explain why not:



3) Double Displacement: Predict the products of the reactions below (names and formulas), balance the equations, and write the complete ionic and net ionic equations if the reaction occurs. Identify the spectator ions by circling them in the complete ionic equation.



net ionic:



**Chemistry I**  
**Chemical Reactions review**

**Key terms:**

Single displacement  
Double displacement  
Decomposition  
Synthesis  
Combustion  
Net ionic equation  
Spectator ions

*\* Know your polyatomic ions !!*

**Be able to do any of the problems types that follow.**

1) Balance the following reactions:

