

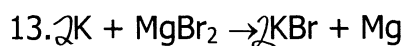
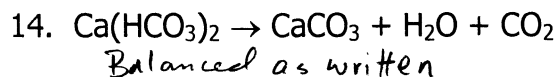
# Chemistry - Chemical Reactions

Name: Key Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Balancing and Identifying Chemical Reaction Equations

Balance each of the following equations. Also identify the type of reaction from those given in the chapter reading and lecture. (Combination (synthesis), decomposition, single replacement, double displacement (precipitation), acid-base neutralization, combustion)

Reaction Equation	Reaction Type
1. $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$	<u>Synthesis</u>
2. $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$	<u>decomposition</u>
3. $2\text{NaCl} + \text{F}_2 \rightarrow 2\text{NaF} + \text{Cl}_2$	<u>Single Replacement</u>
4. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$	<u>Synthesis</u>
5. $\text{CaBr}_2 + \text{K}_2\text{SO}_4 \rightarrow 2\text{KBr} + \text{CaSO}_4$	<u>Double Displacement (Precipitation)</u>
6. $\text{C}_3\text{H}_8 + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$	<u>Combustion</u>
7. $\text{FeCl}_3 + 3\text{NaOH} \rightarrow \text{Fe}(\text{OH})_3 + 3\text{NaCl}$	<u>Double Displacement (Precipitation)</u>
8. $\text{P}_4 + 5\text{O}_2 \rightarrow 2\text{P}_2\text{O}_5$	<u>Synthesis</u>
9. $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$	<u>Single replacement</u>
10. $2\text{Ag}_2\text{O} \rightarrow 4\text{Ag} + \text{O}_2$	<u>decomposition</u>
11. $2\text{AgNO}_3 + \text{MgCl}_2 \rightarrow 2\text{AgCl} + \text{Mg}(\text{NO}_3)_2$	<u>Double Displacement</u>
12. $\text{S}_8 + 12\text{O}_2 \rightarrow 8\text{SO}_3$	<u>Synthesis</u>

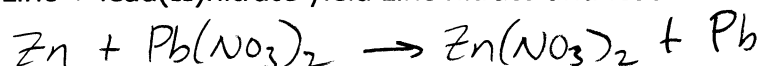
**Reaction Equation****Reaction Type**Single ReplacementDecomposition

Three of the above reactions are double displacement (precipitation) reactions. For each of these reactions, identify the number of the reaction and determine the insoluble product (chemical formula) formed. (Hint: Use your solubility rules)

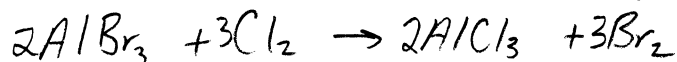
**Problem Number****Insoluble Product**5Calcium Sulfate ( $CaSO_4$ )7Iron(III) hydroxide ( $Fe(OH)_3$ )11Silver Chloride ( $AgCl$ )

Write the word equations below as chemical equations and balance.

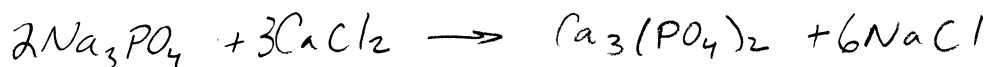
1. zinc + lead(II)nitrate yield zinc nitrate and lead



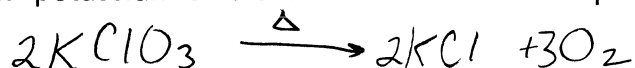
2. aluminum bromide reacts with chlorine to yield aluminum chloride and bromine



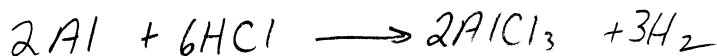
3. sodium phosphate + calcium chloride yield calcium phosphate + sodium chloride



4. potassium chlorate when heated decomposes to produce potassium chloride and oxygen gas



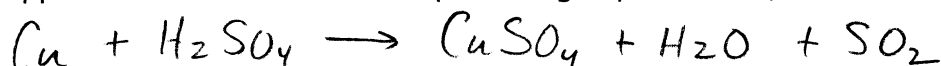
5. aluminum + hydrochloric acid yields aluminum chloride and hydrogen gas



6. calcium hydroxide reacts with phosphoric acid yielding calcium phosphate and water



7. copper reacts with sulfuric acid producing cupric sulfate, water and sulfur dioxide



8. hydrogen + nitrogen monoxide yields water + nitrogen gas

