

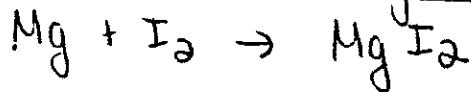
# Predicting Products of Chemical Reactions

Directions: First write the names of the products on the lines provided, translate the word equation to chemical formulas, then balance. Don't forget your DIATOMICS!

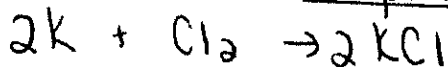
**Synthesis**- a chemical change in which two or more substances react to form a new single substance

Example: Iron + sulfur → iron (II) sulfide  
 $8\text{Fe} + \text{S}_8 \rightarrow 8\text{FeS}$

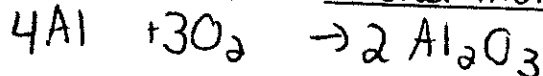
1. Magnesium + Iodine → magnesium iodide



2. Potassium + Chlorine → potassium chloride



3. Aluminum + Oxygen → aluminum oxide



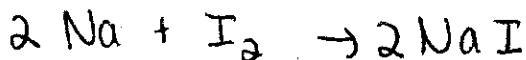
4. Lithium + Nitrogen → lithium nitride



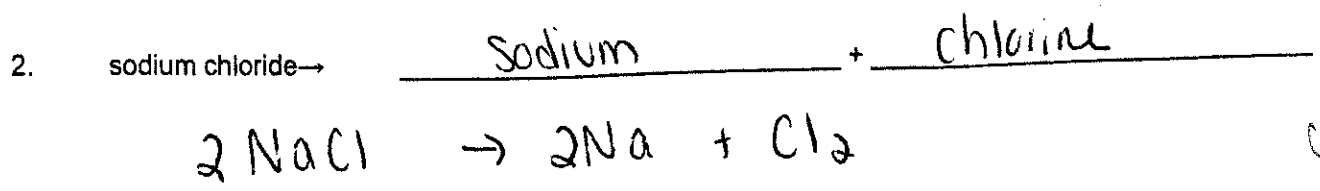
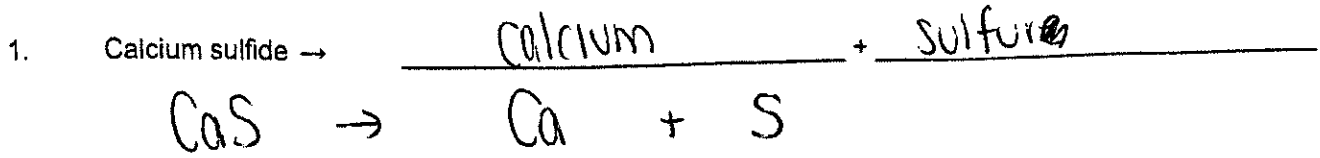
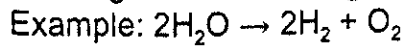
5. calcium + oxygen → calcium oxide



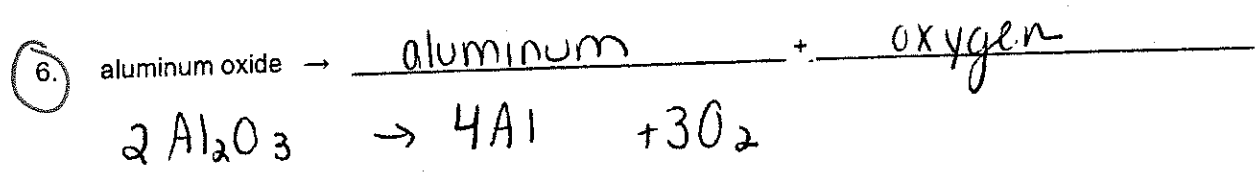
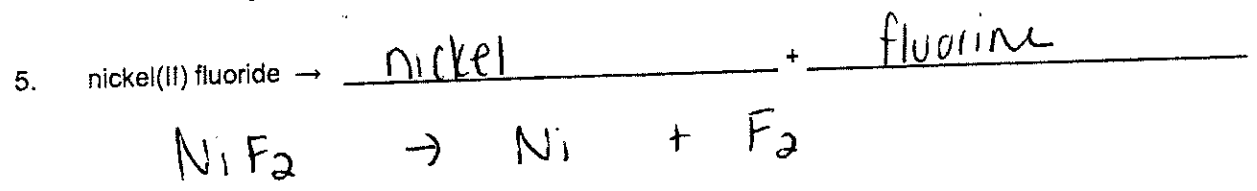
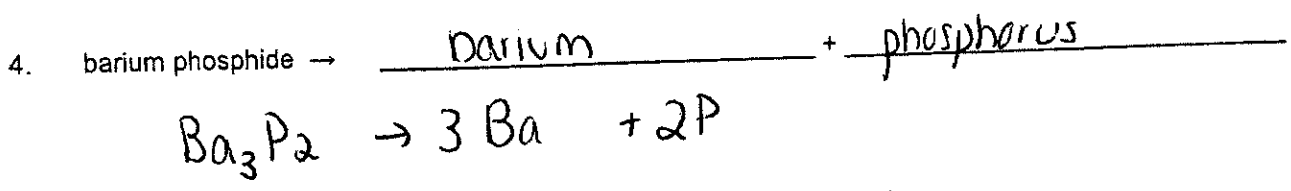
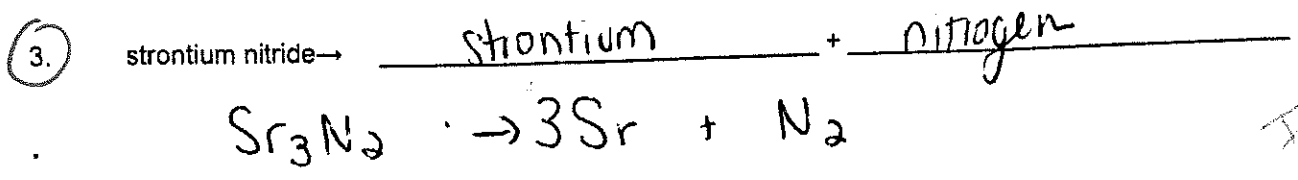
6. sodium + iodine → sodium iodide



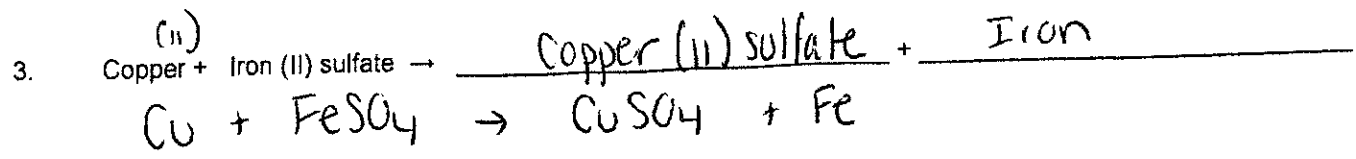
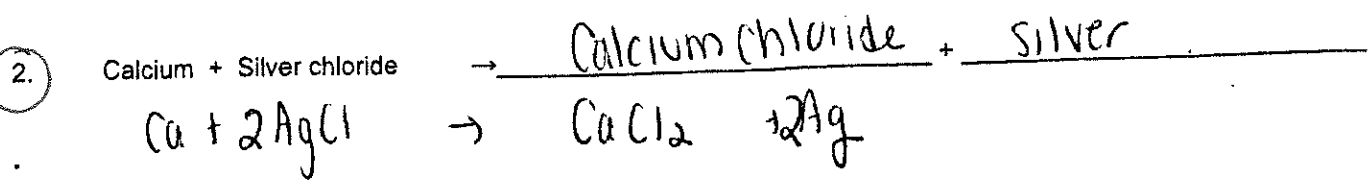
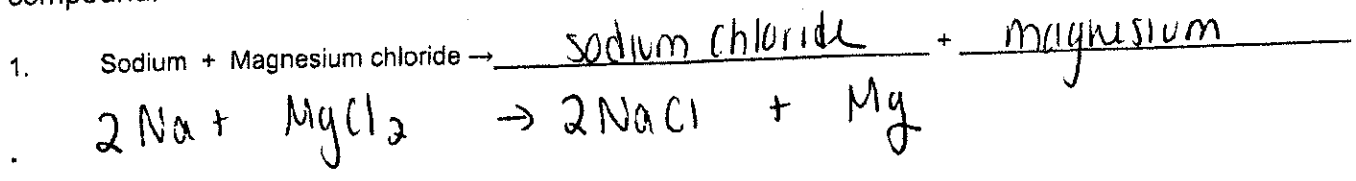
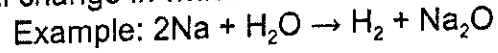
**Decomposition-** a chemical change in which a single compound breaks down into two or more simpler products.

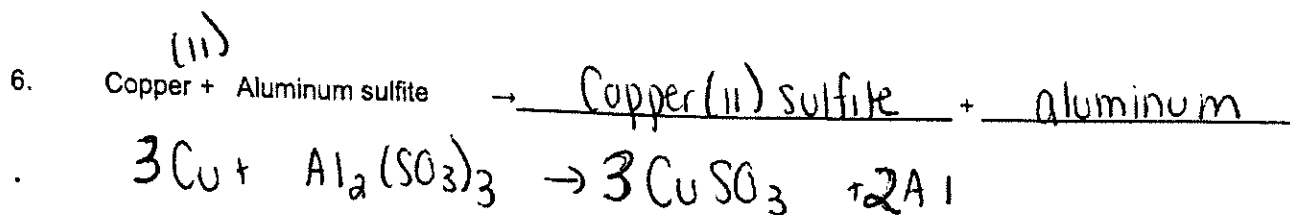
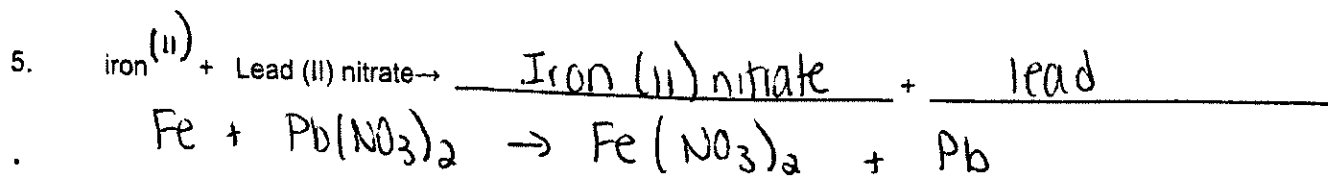
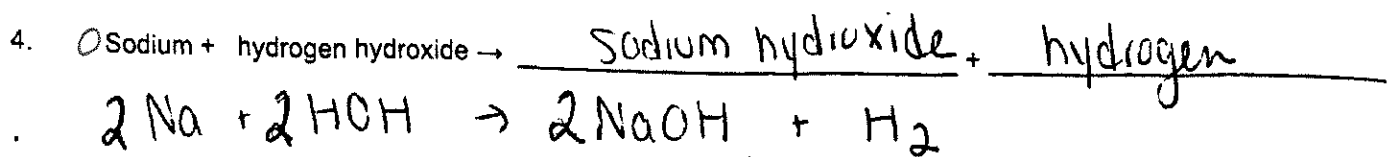


$\text{Cu}^{+2} \text{SO}_4$   
 $\text{Fe}^{+2} \text{SO}_4$   
 $\text{Fe}^{+3} \text{SO}_4$   
 $\text{Fe}^{+2}$

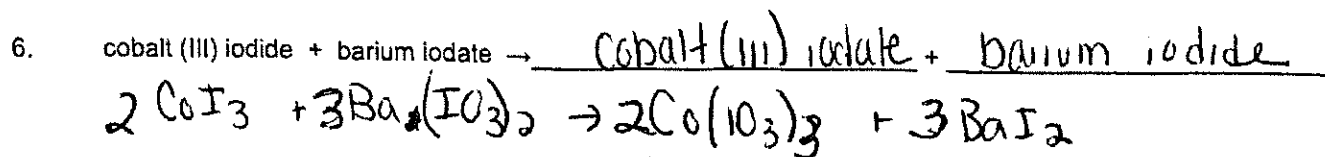
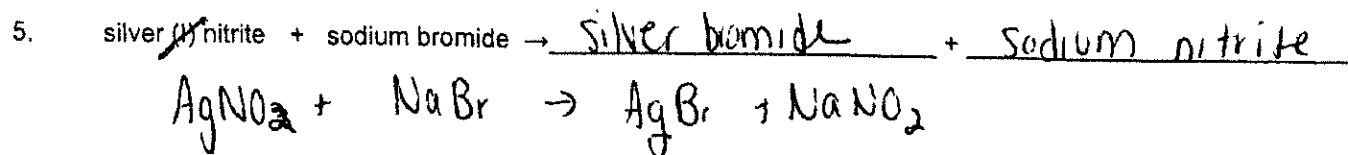
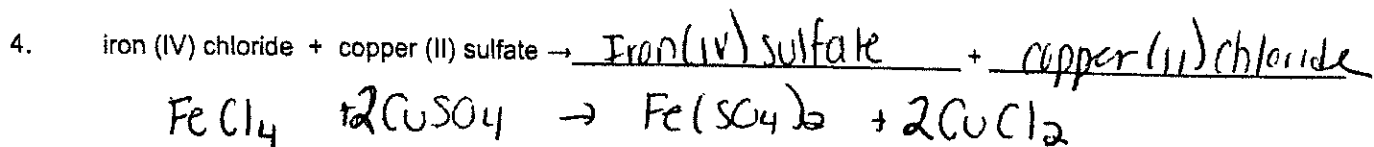
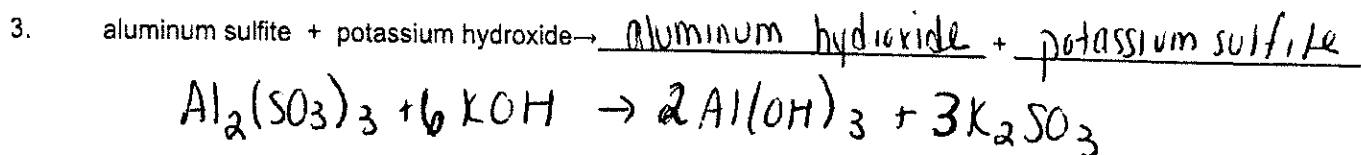
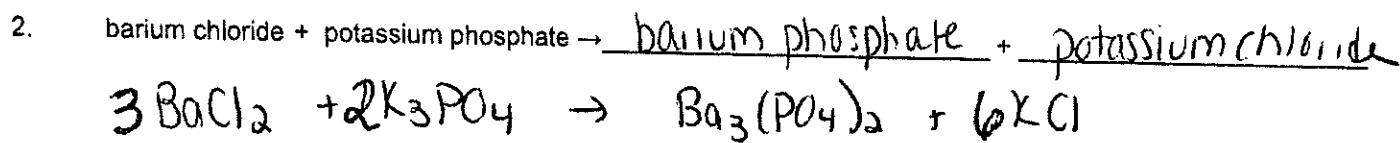
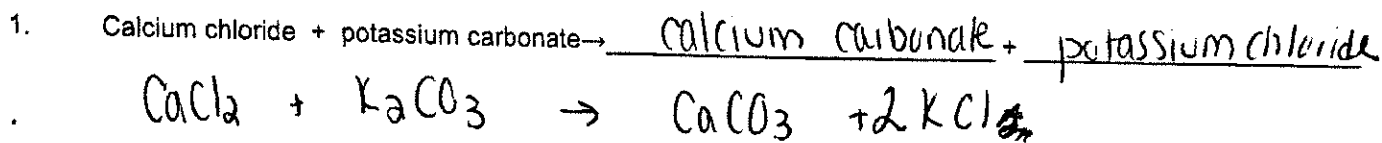
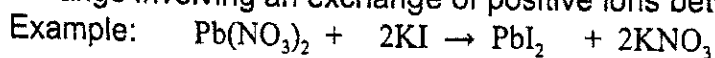


**Single Replacement-** a chemical change in which one element replaces a second element in a compound.



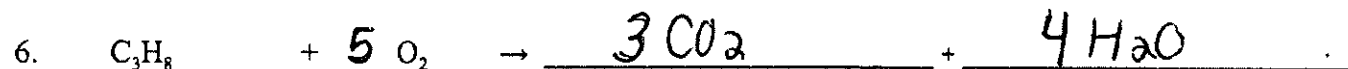
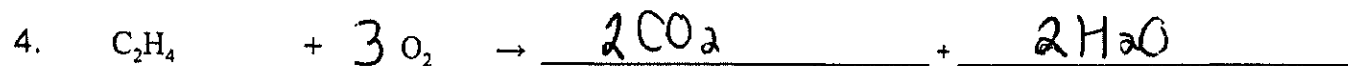
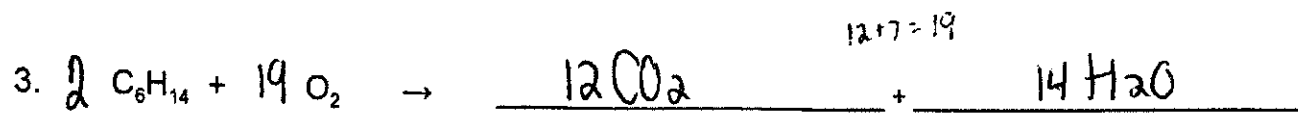
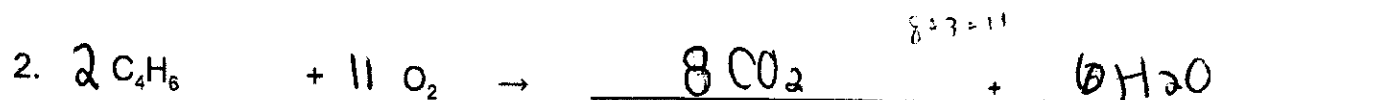
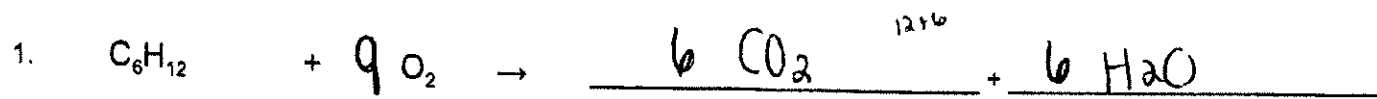


**Double Replacement-** a chemical change involving an exchange of positive ions between two compounds.



**Combustion**- when a hydrocarbon reacts with  $O_2$  to form  $CO_2$  and  $H_2O$ .  
Example:  $2C_4H_{10} + 7O_2 \rightarrow 4CO_2 + 10H_2O$

When balancing: 1. Count carbons. 2. Count hydrogens. 3. Count oxygens.



## Predicting Reaction Products

Balance the equations and predict the products for the following reactions:

