

NAME Answer Key

SECTION \_\_\_\_\_ DATE \_\_\_\_\_

INSTRUCTOR \_\_\_\_\_

### EXERCISE 6

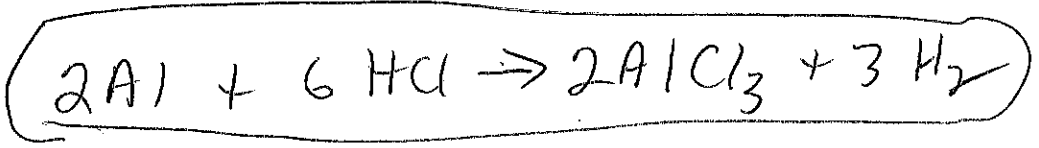
#### Equation Writing and Balancing I

*Name the type (9.3)*  
Balance the following equations:

1.  $2\text{Mg} + \text{O}_2 \xrightarrow{\Delta} 2\text{MgO}$  *combin.*
2.  $2\text{KClO}_3 \xrightarrow{\Delta} 2\text{KCl} + 3\text{O}_2$  *decomp.*
3.  $3\text{Fe} + 2\text{O}_2 \xrightarrow{\Delta} \text{Fe}_3\text{O}_4$  *synthesis or combination*
4.  $\text{Mg} + 2\text{HCl} \longrightarrow \text{MgCl}_2 + \text{H}_2$  *single replacement*
5.  $2\text{Na} + 2\text{H}_2\text{O} \longrightarrow 2\text{NaOH} + \text{H}_2$  *single replacement*

*write the name.*  
Beneath each word equation write the formula equation and balance it. Remember that oxygen and hydrogen are diatomic molecules.

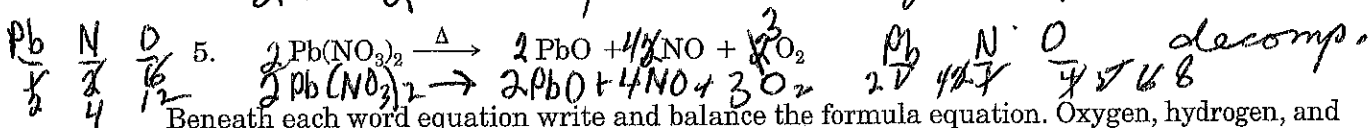
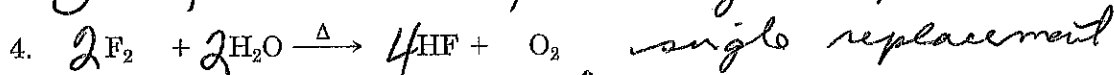
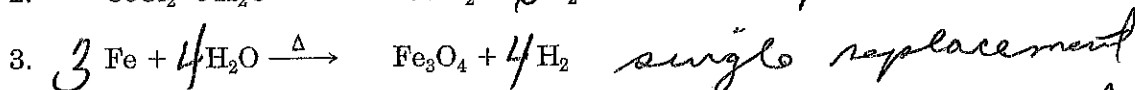
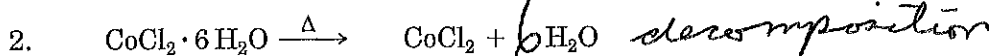
1. Sulfur + Oxygen  $\xrightarrow{\Delta}$  Sulfur dioxide *combin.*  
 $\text{S} + \text{O}_2 \rightarrow \text{SO}_2$
2. Zinc + Sulfuric acid  $\longrightarrow$  Zinc sulfate + Hydrogen *single repl.*  
 $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$
3. Carbon + Oxygen  $\xrightarrow{\Delta}$  Carbon dioxide *combin. or synthesis*  
 $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$
4. Hydrogen + Oxygen  $\xrightarrow{\Delta}$  Water *combination or synthesis*  
 $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
5. Aluminum + Hydrochloric acid  $\longrightarrow$  Aluminum chloride + Hydrogen *single repl.*  
 $2\text{Al} + 6\text{HCl} \rightarrow 2\text{AlCl}_3 + 3\text{H}_2$



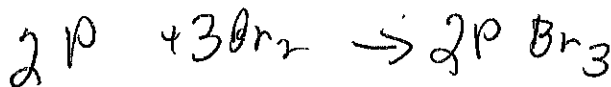
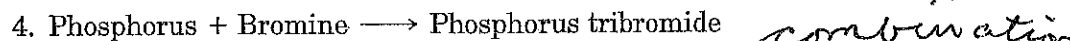
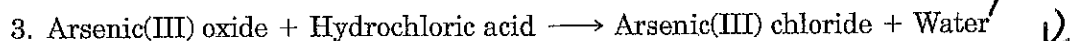
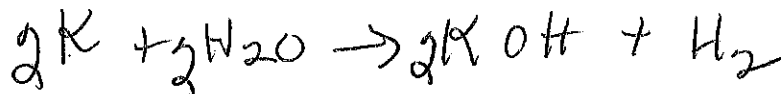
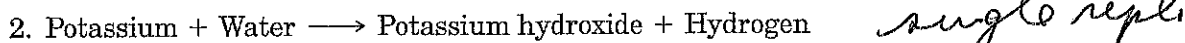
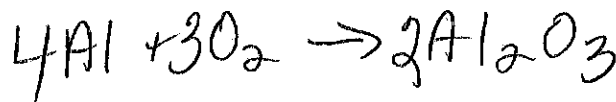
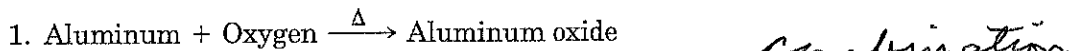
EXERCISE 6 (continued)

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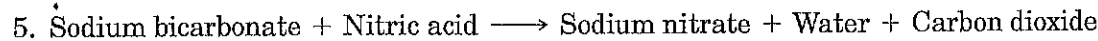
Balance the following equations:



Beneath each word equation write and balance the formula equation. Oxygen, hydrogen, and bromine are diatomic molecules



*or synthesis*



*double replacement*