

## Writing Equations

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1.  $\text{CaO(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2\text{(aq)}$
2.  $2\text{AgNO}_3\text{(aq)} + \text{Ni(s)} \rightarrow \text{Ni(NO}_3)_2\text{(aq)} + 2\text{Ag(s)}$
3.  $\text{NaOH(aq)} + \text{HCl(aq)} \rightarrow \text{NaCl(aq)} + \text{H}_2\text{O(l)}$
4.  $\text{NH}_4\text{NO}_2\text{(s)} \rightarrow \text{N}_2\text{(g)} + 2\text{H}_2\text{O(g)}$
5.  $2\text{Al(s)} + 3\text{FeO(s)} \rightarrow \text{Al}_2\text{O}_3 + 3\text{Fe(s)}$
6.  $\text{Zn(s)} + \text{S(s)} \rightarrow \text{ZnS(s)}$
7. Iron + oxygen gas  $\rightarrow$  Iron (III) oxide
8. Water + dinitrogen trioxide  $\rightarrow$  nitrous acid
9.  $2\text{KNO}_3\text{(s)} \rightarrow 2\text{KNO}_2\text{(s)} + \text{O}_2\text{(g)}$
10. Iron (III) oxide + carbon monoxide  $\rightarrow$  Iron + carbon dioxide
11.  $\text{Zn(s)} + 2\text{HCl(aq)} \rightarrow \text{ZnCl}_2\text{(aq)} + \text{H}_2\text{(aq)}$

## Synthesis Reactions

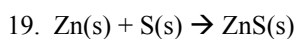
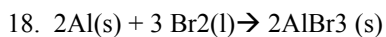
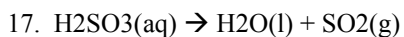
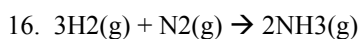
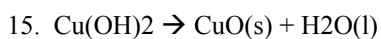
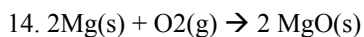
1. water  $2\text{H(g)} + \text{O}_2\text{(g)} \rightarrow 2\text{H}_2\text{O(l)}$
2. hydrogen chloride  $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$
3. hydrogen iodide  $\text{H}_2 + \text{I}_2 \rightarrow 2\text{HI}$
4. sodium oxide  $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
5. Potassium chloride  $2\text{K} + \text{Cl}_2 \rightarrow 2\text{KCl}$
6. Lithium iodide  $2\text{Li} + \text{I}_2 \rightarrow 2\text{LiI}$
7. calcium fluoride  $\text{Ca} + \text{F}_2 \rightarrow \text{CaF}_2$
8. magnesium chloride  $\text{Mg} + \text{Cl}_2 \rightarrow \text{MgCl}_2$
9. Beryllium iodide  $\text{Be} + \text{I}_2 \rightarrow \text{BeI}_2$
10. Strontium bromide  $\text{Sr} + \text{Br}_2 \rightarrow \text{SrBr}_2$
11. Calcium oxide  $2\text{Ca} + \text{O}_2 \rightarrow 2\text{CaO}$
12. Magnesium oxide  $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO(s)}$
13. Boron chloride  $2\text{B} + 3\text{Cl}_2 \rightarrow 2\text{BCl}_3\text{(s)}$

14. Aluminum iodide  $2Al + 3I_2 \rightarrow 2AlI_3(s)$
15.  $2Cu(s) + O_2(g) \rightarrow 2CuO(s)$
16. Copper (I) oxide  $4Cu(s) + O_2(g) \rightarrow 2Cu_2O(s)$
17.  $2Pb(s) + O_2(g) \rightarrow 2PbO$
18.  $Pb(s) + O_2(g) \rightarrow PbO_2(s)$
19.  $Fe + Cl_2 \rightarrow FeCl_2$
20.  $2Fe + 3Cl_2 \rightarrow 2FeCl_3(s)$
21.  $CuO(s) + H_2O \rightarrow Ca(OH)_2(aq)$
22.  $Na_2O + H_2O \rightarrow 2NaOH(aq)$
23.  $MgO + H_2O \rightarrow Mg(OH)_2(aq)$
24.  $SO_3 + H_2O \rightarrow H_2SO_4(aq)$
25.  $N_2O_5 + H_2O \rightarrow 2HNO_3(aq)$

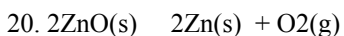
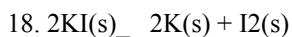
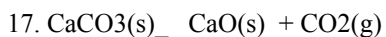
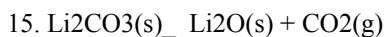
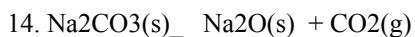
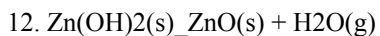
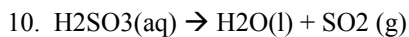
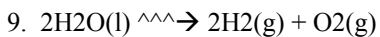
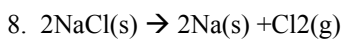
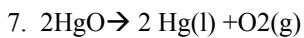
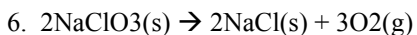
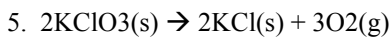
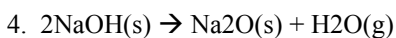
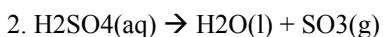
Composition/ decomposition reactions

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1.  $CaCO_3(s) \rightarrow CaO(s) + CO_2(g)$
2.  $2NaOH \rightarrow Na_2O(s) + H_2O(g)$
3.  $2KClO_3(s) \rightarrow 2KCl(s) + 3O_2(g)$
4.  $H_2CO_3 \rightarrow H_2O(l) + CO_2(g)$
5.  $2HgO(s) \rightarrow 2Hg(l) + O_2(g)$
6.  $2H_2O \xrightarrow{\text{electrolysis}} 2H_2(g) + O_2(g)$
7.  $Ni(ClO_3)_2(s) \rightarrow 2NiCl(s) + 3O_2(g)$
8.  $SO_3(g) + H_2O(l) \rightarrow H_2SO_4(aq)$
9.  $H_2(g) + Cl_2(g) \rightarrow 2HCl(g)$
10.  $Zn(OH)_2 \rightarrow ZnO + H_2O$
11.  $K_2O(s) + H_2O \rightarrow 2KOH(aq)$
12.  $Na_2CO_3(s) \rightarrow Na_2O(s) + CO_3(g)$
13.  $2NaCl(s) \xrightarrow{\text{electrolysis}} 2Na(s) + Cl_2(g)$

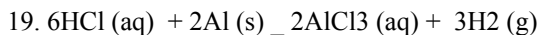
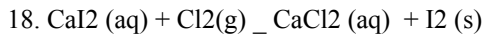
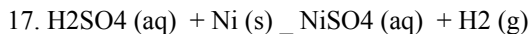
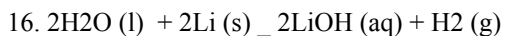
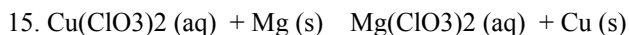
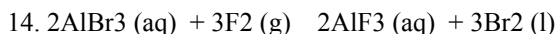
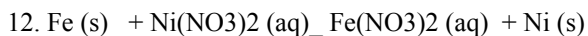
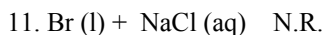
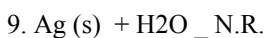
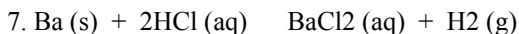
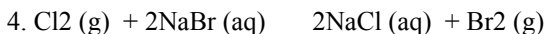
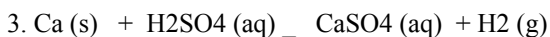
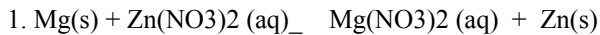


#### Decomposition Reactions

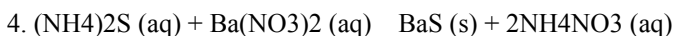
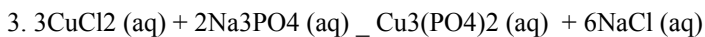
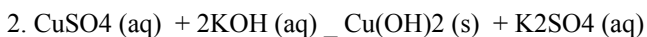
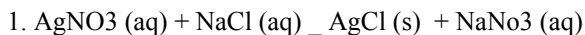




### **Replacement Rxns**



### **Ionic Reactions ( D.D)**



5.  $\text{K}_2\text{SO}_4 (\text{aq}) + \text{NaCl} (\text{aq}) \_ \text{N.R.}$
6.  $\text{Ba}(\text{NO}_3)_2 (\text{aq}) + \text{CuSO}_4 (\text{aq}) \_ \text{BaSO}_4 (\text{s}) + \text{Cu}(\text{NO}_3)_2 (\text{aq})$
7.  $\text{Na}_2\text{CO}_3 (\text{aq}) + 2\text{HCl} (\text{aq}) \_ \text{N.R.}$   $\text{H}_2\text{CO}_3 (\text{aq}) + 2\text{NaCl} (\text{aq})$  weaker acid will form
8.  $(\text{NH}_4)_2\text{S} (\text{aq}) + \text{NaOH} (\text{aq}) \_ \text{NH}_4\text{OH} (\text{aq}) + \text{Na}_2\text{S} (\text{aq})$  Weaker base forms
9.  $\text{LiSO}_3 (\text{aq}) + \text{HCl} (\text{aq}) \_ \text{LiCl} (\text{aq}) + \text{H}_2\text{SO}_3 (\text{aq})$  Weaker acid
10.  $(\text{NH}_4)_2 \text{CuO}_4 (\text{aq}) + \text{K}_2\text{CO}_3 (\text{aq}) \_ \text{N.R.}$
11.  $\text{Mg}(\text{OH})_2 (\text{aq}) + \text{H}_2\text{SO}_4 (\text{aq}) \_ 2\text{H}_2\text{O} (\text{l}) + \text{MgSO}_4 (\text{aq})$  Neutralization reaction
12.  $2\text{H}_3\text{PO}_4 (\text{aq}) + 3\text{Ca}(\text{OH})_2 (\text{aq}) \_ 6\text{H}_2\text{O}(\text{l}) + \text{Ca}_3(\text{PO}_4)_2 (\text{s})$  Neutralization and PPT
13.  $2\text{AlBr}_3 (\text{aq}) + 3\text{Pb}(\text{NO}_3)_2 (\text{aq}) \_ 3\text{PbBr}_2 (\text{s}) + 2\text{Al}(\text{NO}_3)_3 (\text{aq})$
14.  $\text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2 (\text{aq}) + \text{K}_2\text{CO}_3 (\text{aq}) \_ \text{MgCO}_3 (\text{s}) + 2\text{KC}_2\text{H}_3\text{O}_2 (\text{aq})$
15.  $\text{CuCO}_3 (\text{s}) + \text{HC}_2\text{H}_3\text{O}_2 (\text{aq}) \_ \text{H}_2\text{CO}_3 (\text{aq}) + \text{Cu}(\text{C}_2\text{H}_3\text{O}_2)_2 (\text{aq})$
16.  $\text{H}_2\text{S} (\text{aq}) + \text{Pb}(\text{NO}_3)_2 (\text{aq}) \_ \text{PbS} (\text{s}) + 2\text{HNO}_3 (\text{aq})$
17.  $\text{BaCl}_2 (\text{aq}) + \text{NaBr} (\text{aq}) \_ \text{N.R.}$
18.  $3\text{K}_2\text{CrO}_4 (\text{aq}) + 2\text{Al} (\text{ClO}_3)_3 (\text{aq}) \_ \text{Al}_2(\text{CrO}_4)_3 (\text{s}) + 6\text{KClO}_3 (\text{aq})$