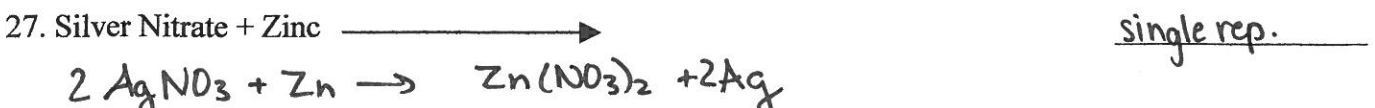
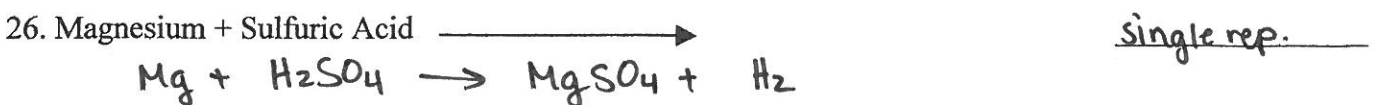
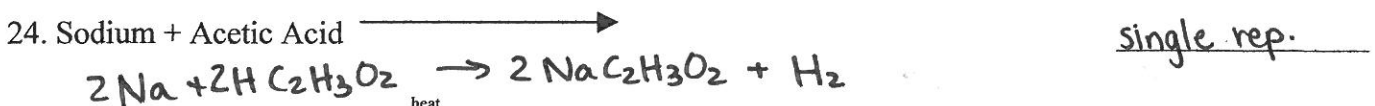
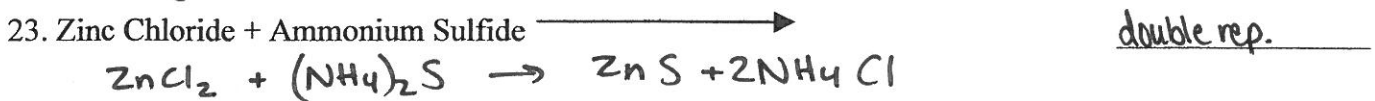
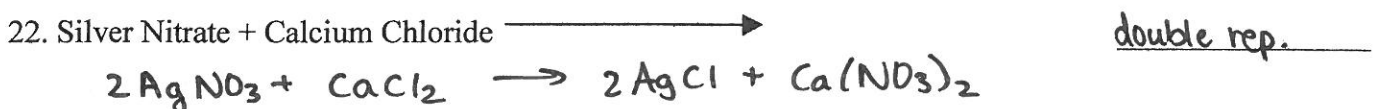
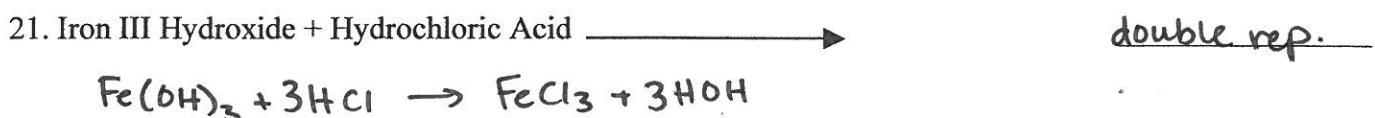
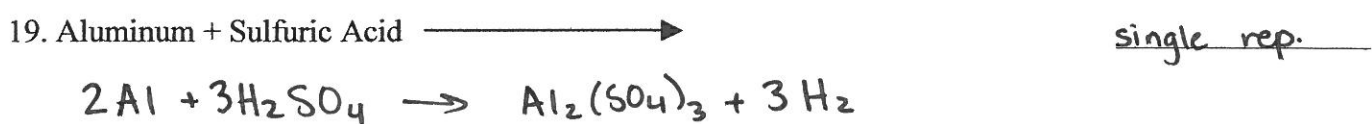
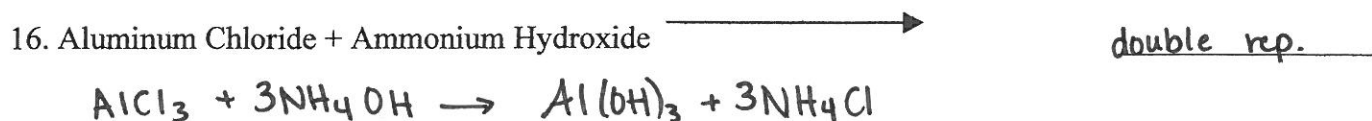
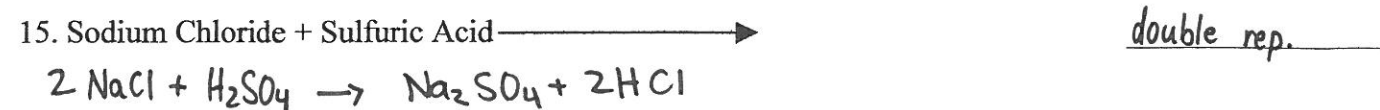


Name KEY Pr. \_\_\_ Date \_\_\_\_\_

Write balanced formula equations for these reactions and identify the type of reaction.

1. Potassium + Iodine  $\xrightarrow{\hspace{1cm}}$   $2\text{KI}$  synthesis  
 $2\text{K} + \text{I}_2$
2. Barium Iodide + Sodium Sulfate  $\xrightarrow{\hspace{1cm}}$  double rep.  
 $\text{BaI}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaI}$
3. Aluminum Hydroxide  $\xrightarrow{\text{heat}}$  decomposition  
 $2\text{Al}(\text{OH})_3 \rightarrow \text{Al}_2\text{O}_3 + 3\text{H}_2\text{O}$   
HOH
4. Sodium Chlorate  $\xrightarrow{\text{heat}}$  decomposition  
 $\text{NaClO}_3 \rightarrow \text{NaCl} + \text{O}_2$
5. Aluminum Bromide + Chlorine  $\xrightarrow{\hspace{1cm}}$  single replacement  
 $\text{AlBr}_3 + \text{Cl}_2 \rightarrow \text{AlCl}_3 + \text{Br}_2$
6. Phosphoric Acid + Magnesium  $\xrightarrow{\hspace{1cm}}$  single rep.  
 $\text{H}_3\text{PO}_4 + \text{Mg} \rightarrow \text{Mg}_3(\text{PO}_4)_2 + \text{H}_2$
7. Iron III Sulfate + Calcium Nitrate  $\xrightarrow{\hspace{1cm}}$  double rep.  
 $\text{Fe}_2(\text{SO}_4)_3 + 3\text{Ca}(\text{NO}_3)_2 \rightarrow 2\text{Fe}(\text{NO}_3)_3 + 3\text{CaSO}_4$
8. Sodium + Water  $\xrightarrow{\text{HOH}}$  single rep.  
 $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$
9. Aluminum + Iodine  $\xrightarrow{\hspace{1cm}}$  synthesis  
 $2\text{Al} + 3\text{I}_2 \rightarrow 2\text{AlI}_3$
10. Iron III Hydroxide + Hydrobromic Acid  $\xrightarrow{\hspace{1cm}}$  double rep.  
 $\text{Fe}(\text{OH})_3 + 3\text{HBr} \rightarrow \text{FeBr}_3 + 3\text{HOH}$
11. Magnesium Hydroxide + Ammonium Sulfate  $\xrightarrow{\hspace{1cm}}$  double rep.  
 $\text{Mg}(\text{OH})_2 + (\text{NH}_4)_2\text{SO}_4 \rightarrow \text{MgSO}_4 + 2\text{NH}_4\text{OH}$
12. Water  $\xrightarrow{\text{electricity}}$  decomposition  
 $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$
13. Calcium + Hydrochloric Acid  $\xrightarrow{\hspace{1cm}}$  single replacement  
 $\text{Ca} + 2\text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2$
14. Lithium + Chlorine  $\xrightarrow{\hspace{1cm}}$  synthesis  
 $2\text{Li} + \text{Cl}_2 \rightarrow 2\text{LiCl}$



29. Magnesium Chloride + Iodine  $\longrightarrow$  single rep.  

$$\text{MgCl}_2 + \text{I}_2 \rightarrow \text{NR}$$
30. Silver + Water  $\longrightarrow$  single rep.  

$$\text{Ag} + \text{H}_2\text{O} \rightarrow \text{NR}$$
31. Octane ( $\text{C}_8\text{H}_{18}$ ) + Oxygen  $\longrightarrow$  combustion  

$$2 \text{C}_8\text{H}_{18} + 17 \text{O}_2 \rightarrow 16 \text{CO}_2 + 18 \text{H}_2\text{O}$$
32. Iron III Hydroxide  $\xrightarrow{\text{heat}}$  decomposition  

$$2 \text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + 3 \text{H}_2\text{O}$$
33. Calcium Hydroxide + Carbonic Acid  $\longrightarrow$  double rep.  

$$\text{Ca}(\text{OH})_2 + \text{H}_2\text{CO}_3 \rightarrow \text{CaCO}_3 + 2 \text{H}_2\text{O}$$
34. Sodium Chloride + Sulfuric Acid  $\longrightarrow$  double rep.  

$$2 \text{NaCl} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2 \text{HCl}$$
35. Mercury II Oxide  $\xrightarrow{\text{heat}}$  decomposition  

$$2 \text{HgO} \rightarrow 2 \text{Hg} + \text{O}_2$$
36. Lithium + Oxygen  $\longrightarrow$  synthesis  

$$4 \text{Li} + \text{O}_2 \rightarrow 2 \text{Li}_2\text{O}$$
37. Aluminum Sulfate + Calcium Hydroxide  $\longrightarrow$  double rep.  

$$\text{Al}_2(\text{SO}_4)_3 + 3 \text{Ca}(\text{OH})_2 \rightarrow 3 \text{CaSO}_4 + 2 \text{Al}(\text{OH})_3$$
38. Chromium III Sulfate + Hydrogen Bromide  $\longrightarrow$  double rep.  

$$\text{Cr}_2(\text{SO}_4)_3 + \text{HBr} \rightarrow \text{H}_2\text{SO}_4 + \text{CrBr}_3$$
39. Carbonic Acid  $\xrightarrow{\text{heat}}$  decomposition  

$$\text{H}_2\text{CO}_3 \rightarrow \text{H}_2\text{O} + \text{CO}_2$$
40. Calcium Hydroxide + Phosphoric Acid  $\longrightarrow$  double rep.  

$$3 \text{Ca}(\text{OH})_2 + 2 \text{H}_3\text{PO}_4 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + 6 \text{H}_2\text{O}$$
41. Tin IV Acetate + Barium  $\xrightarrow{\text{heat}}$  single rep.  

$$\text{Sn}(\text{C}_2\text{H}_3\text{O}_2)_4 + 2 \text{Ba} \rightarrow 2 \text{Ba}(\text{C}_2\text{H}_3\text{O}_2)_2 + \text{Sn}$$
42. Chromium III Hydroxide  $\xrightarrow{\text{heat}}$  decomposition  

$$2 \text{Cr}(\text{OH})_3 \rightarrow \text{Cr}_2\text{O}_3 + 3 \text{H}_2\text{O}$$
43. Copper II Sulfate + Magnesium  $\longrightarrow$  single rep.  

$$\text{CuSO}_4 + \text{Mg} \rightarrow \text{MgSO}_4 + \text{Cu}$$
44. Manganese III Hydroxide + Zinc Chloride  $\longrightarrow$  double rep.  

$$2 \text{Mn}(\text{OH})_3 + 3 \text{ZnCl}_2 \rightarrow 3 \text{Zn}(\text{OH})_2 + 2 \text{MnCl}_3$$
45. Potassium + Water  $\longrightarrow$  single rep.  

$$2 \text{K} + 2 \text{H}_2\text{O} \rightarrow 2 \text{KOH} + \text{H}_2$$
  
H OH

46. Potassium Chlorate  $\xrightarrow{\text{heat}}$   
 $2 \text{KClO}_3 \rightarrow 2 \text{KCl} + 3 \text{O}_2$  decomposition
47. Propane ( $\text{C}_3\text{H}_8$ ) + Oxygen  $\xrightarrow{\hspace{1cm}}$   
 $\text{C}_3\text{H}_8 + 5 \text{O}_2 \rightarrow 3 \text{CO}_2 + 4 \text{H}_2\text{O}$  combustion
48. Nickel + Water  $\xrightarrow{\hspace{1cm}}$   
 $\text{Ni} + \text{H}_2\text{O} \rightarrow \text{NR}$  single rep.
49. Barium Chloride + Sulfuric Acid  $\xrightarrow{\hspace{1cm}}$   
 $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow 2 \text{HCl} + \text{BaSO}_4$  double rep.
50. Sulfurous Acid  $\xrightarrow{\text{heat}}$   
 $\text{H}_2\text{SO}_3 \rightarrow \text{H}_2\text{O} + \text{SO}_2$  decomposition
51. Water + Barium Oxide  $\xrightarrow{\hspace{1cm}}$   
 $\text{H}_2\text{O} + \text{BaO} \rightarrow \text{Ba}(\text{OH})_2$  synthesis
52. Tin + Magnesium Bromate  $\xrightarrow{\hspace{1cm}}$   
 $\text{Sn} + \text{MgBr}_2 \rightarrow \text{NR}$  single rep
53. Sodium Sulfite  $\xrightarrow{\text{heat}}$   
 $\text{Na}_2\text{SO}_3 \rightarrow \text{Na}_2\text{O} + \text{SO}_2$  decomposition
54. Carbon Dioxide + Magnesium Oxide  $\xrightarrow{\hspace{1cm}}$   
 $\text{CO}_2 + \text{MgO} \rightarrow \text{MgCO}_3$  synthesis
55. Butane ( $\text{C}_4\text{H}_{10}$ ) + Oxygen  $\xrightarrow{\hspace{1cm}}$   
 $2 \text{C}_4\text{H}_{10} + 13 \text{O}_2 \rightarrow 10 \text{H}_2\text{O} + 8 \text{CO}_2$  combustion
56. Silver Chloride + Bromine  $\xrightarrow{\hspace{1cm}}$   
 $\text{AgCl} + \text{Br}_2 \rightarrow \text{NR}$  single rep
57. Dinitrogen Trioxide + water  $\xrightarrow{\hspace{1cm}}$   
 $\text{N}_2\text{O}_3 + \text{H}_2\text{O} \rightarrow \text{HNO}_3$  synthesis
58. Sodium hydroxide  $\xrightarrow{\text{heat}}$   
 $4 \text{NaOH} \rightarrow 2 \text{Na}_2\text{O} + 2 \text{H}_2\text{O}$  decomposition
59. Lead II nitrate + Aluminum iodide  $\xrightarrow{\hspace{1cm}}$   
 $3 \text{Pb}(\text{NO}_3)_2 + 2 \text{AlI}_3 \rightarrow 2 \text{Al}(\text{NO}_3)_3 + 3 \text{PbI}_2$  double rep
60. Lithium Chloride + oxygen  $\xrightarrow{\hspace{1cm}}$   
 $2 \text{LiCl} + 3 \text{O}_2 \rightarrow 2 \text{LiClO}_3$  synthesis

## 10.4 - KEY

### Synthesis + decomposition

1.  $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
2.  $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3$
3.  $\text{K}_2\text{O} + \text{CO}_2 \rightarrow \text{K}_2\text{CO}_3$
4.  $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$
5.  $\text{Li}_2\text{O} + \text{H}_2\text{O} \rightarrow 2\text{LiOH}$
6.  $2\text{AlCl}_3 \rightarrow 2\text{Al} + 3\text{Cl}_2$
7.  $2\text{Na} + \text{I}_2 \rightarrow 2\text{NaI}$
8.  $\text{H}_2\text{CO}_3 \rightarrow \text{H}_2\text{O} + \text{CO}_2$
9.  $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
10.  $\text{MgO} + \text{SO}_3 \rightarrow \text{MgSO}_4$

### Single replacement

1.  $\text{Cu} + \text{H}_2\text{O} \rightarrow \text{NR}$
2.  $\text{Br}_2 + 2\text{NaI} \rightarrow 2\text{NaBr} + \text{I}_2$
3.  $\text{Al} + 3\text{AgNO}_3 \rightarrow \text{Al}(\text{NO}_3)_3 + 3\text{Ag}$
4.  $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$
5.  $3\text{F}_2 + 2\text{AlCl}_3 \rightarrow 2\text{AlF}_3 + 3\text{Cl}_2$
6.  $\text{Mg} + \text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \rightarrow \text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2 + \text{Pb}$
7.  $\text{I}_2 + \text{NaCl} \rightarrow \text{NR}$
8.  $\text{Ca} + 2\text{HNO}_2 \rightarrow \text{Ca}(\text{NO}_2)_2 + \text{H}_2$
9.  $2\text{Li} + 2\text{HOH} \rightarrow 2\text{LiOH} + \text{H}_2$
10.  $\text{FeCl}_3 + \text{Pt} \rightarrow \text{NR}$

### double replacement (section 1)

1.  $2\text{AgNO}_3 + \text{K}_2\text{CrO}_4 \rightarrow \text{Ag}_2\text{CrO}_4 + 2\text{KNO}_3$
2.  $2\text{LiOH} + \text{Na}_2\text{CrO}_4 \rightarrow 2\text{NaOH} + \text{Li}_2\text{CrO}_4$
3.  $2\text{NH}_4\text{Cl} + \text{CoSO}_4 \rightarrow (\text{NH}_4)_2\text{SO}_4 + \text{CoCl}_2$
4.  $\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2 + 2\text{CsOH} \rightarrow \text{Zn}(\text{OH})_2 + 2\text{CsC}_2\text{H}_3\text{O}_2$
5.  $(\text{NH}_4)_2\text{S} + \text{Pb}(\text{NO}_3)_2 \rightarrow 2\text{NH}_4\text{NO}_3 + \text{PbS}$
6.  $\text{Fe}_2(\text{SO}_4)_3 + 3\text{BaI}_2 \rightarrow 2\text{FeI}_3 + 3\text{BaSO}_4$
7.  $\text{CrBr}_3 + 3\text{NaNO}_3 \rightarrow \text{Cr}(\text{NO}_3)_3 + 3\text{NaBr}$
8.  $4\text{Rb}_3\text{PO}_4 + 3\text{Ti}(\text{NO}_3)_4 \rightarrow 12\text{RbNO}_3 + \text{Ti}_3(\text{PO}_4)_4$
9.  $(\text{NH}_4)_2\text{CO}_3 + \text{NiCl}_2 \rightarrow 2\text{NH}_4\text{Cl} + \text{NiCO}_3$
10.  $\text{Sn}(\text{NO}_3)_4 + 2\text{K}_2\text{SO}_3 \rightarrow \text{Sn}(\text{SO}_3)_2 + 4\text{KNO}_3$

### double replacement (section 2)

1.  $(\text{NH}_4)_2\text{SO}_4 + 2\text{KOH} \rightarrow \text{K}_2\text{SO}_4 + 2\text{NH}_4\text{OH}$
2.  $(\text{NH}_4)_2\text{S} + 2\text{HCl} \rightarrow 2\text{NH}_4\text{Cl} + \text{H}_2\text{S}$
3.  $\text{CoCl}_2 + 2\text{AgNO}_3 \rightarrow 2\text{AgCl} + \text{Co}(\text{NO}_3)_2$
4.  $\text{CaCO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4 + \text{H}_2\text{CO}_3$
5.  $\text{K}_2\text{SO}_3 + 2\text{HBr} \rightarrow 2\text{KBr} + \text{H}_2\text{SO}_3$
6.  $\text{K}_2\text{S} + 2\text{HNO}_3 \rightarrow 2\text{KNO}_3 + \text{H}_2\text{S}$
7.  $\text{Ti}(\text{CO}_3)_2 + 4\text{HCl} \rightarrow \text{TiCl}_4 + 2\text{H}_2\text{CO}_3$
8.  $\text{CaSO}_3 + 2\text{HC}_2\text{H}_3\text{O}_2 \rightarrow \text{Ca}(\text{C}_2\text{H}_3\text{O}_2)_2 + \text{H}_2\text{SO}_3$
9.  $\text{Sr}(\text{OH})_2 + (\text{NH}_4)_2\text{S} \rightarrow \text{SrS} + 2\text{NH}_4\text{OH}$



# Reaction Prediction

Name Key

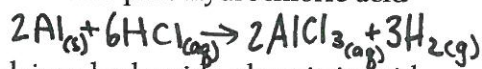
Date \_\_\_\_\_

★ Circled ones are examples you don't need to be able to do ★

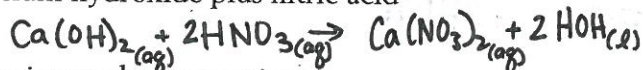
In each of the following examples:

- State what type of reaction is expected.
- Tell whether the reaction will occur or not, and why.
- Write the balanced equation for those reactions that do take place; write the symbols and formulas of the reactants for those reactions that do occur.
- ~~(d)~~ Indicate whether double replacement reactions are reversible or irreversible.

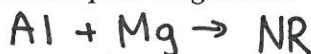
SR 1. aluminum plus hydrochloric acid



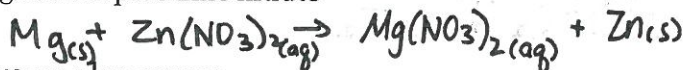
DR 2. calcium hydroxide plus nitric acid



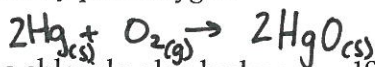
S ③ aluminum plus magnesium



SR 4. magnesium plus zinc nitrate



S 5. mercury plus oxygen



DR 6. zinc chloride plus hydrogen sulfide



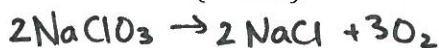
S 7. dinitrogen pentoxide plus water



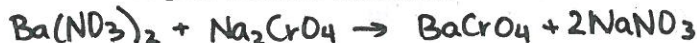
DR 8. silver chloride plus sodium nitrate



D 9. sodium chlorate (heated)



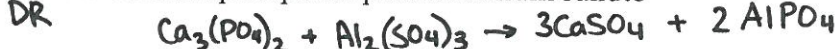
DR 10. barium nitrate plus sodium chromate



DR 11. sodium bromide plus silver nitrate



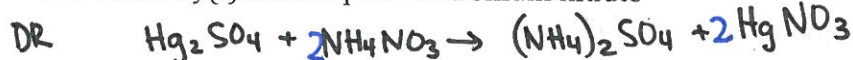
12. calcium phosphate plus aluminum sulfate



13. zinc carbonate (heated)



14. mercury(I) sulfate plus ammonium nitrate



(continued)



Chemistry Problems

# Reaction Prediction (continued)

Name \_\_\_\_\_

Date \_\_\_\_\_

- S 15. potassium plus fluorine  

$$2K + F_2 \rightarrow 2KF$$
- DR 16. potassium nitrate plus zinc phosphate  

$$6KNO_3 + Zn_3(PO_4)_2 \rightarrow 2K_3PO_4 + 3Zn(NO_3)_2$$
 ~~doesn't~~ actually occur
- S 17. lithium oxide plus water  

$$Li_2O + H_2O \rightarrow 2LiOH$$
- D 18. sodium chloride (electrolyzed)  

$$2NaCl \rightarrow 2Na + Cl_2$$
- S (19) silver plus barium  

$$Ag + Ba \rightarrow NR$$
20. iron(III) hydroxide plus phosphoric acid  
 DR 
$$Fe(OH)_3 + H_3PO_4 \rightarrow FePO_4 + 3H_2O$$
21. sodium plus nitric acid  
 SR 
$$2Na + 2HNO_3 \rightarrow 2NaNO_3 + H_2$$
22. iron(III) iodide plus cupric nitrate cupric = copper (II)  
 DR 
$$2FeI_3 + 3Cu(NO_3)_2 \rightarrow 2Fe(NO_3)_3 + 3CuI_2$$
23. copper plus sulfuric acid  
 SR 
$$Cu + H_2SO_4 \rightarrow NR$$
24. lead plus potassium chlorate  
 SR 
$$Pb + KClO_3 \rightarrow NR$$
25. sulfur dioxide plus water  
 S 
$$SO_2 + H_2O \rightarrow H_2SO_3$$
- S (26) oxygen plus sulfur  

$$O_2 + S \rightarrow SO_2$$
27. sodium sulfate plus barium chloride  
 DR 
$$Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$$
28. ammonium phosphate plus lithium hydroxide  
 DR 
$$(NH_4)_3PO_4 + 3LiOH \rightarrow 3NH_4OH + Li_3PO_4$$
29. hydrogen plus oxygen  
 S 
$$2H_2 + O_2 \rightarrow 2H_2O$$
30. mercury plus nitric acid  
 SR 
$$Hg + HNO_3 \rightarrow NR$$
31. sodium oxide plus water  
 S 
$$Na_2O + H_2O \rightarrow 2NaOH$$
32. calcium carbonate plus lithium chloride  
 DR 
$$CaCO_3 + 2LiCl \rightarrow CaCl_2 + Li_2CO_3$$

(continued)



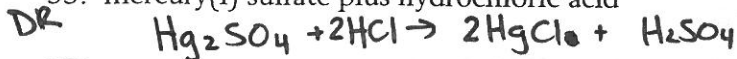


## Reaction Prediction (continued)

Name \_\_\_\_\_

Date \_\_\_\_\_

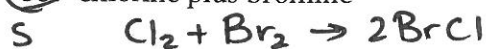
33. mercury(I) sulfate plus hydrochloric acid



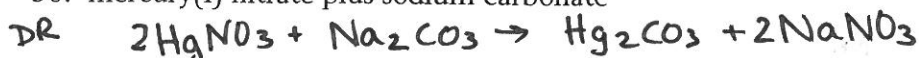
(34) potassium nitrate (heated)



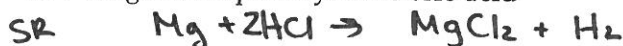
(35) chlorine plus bromine



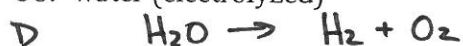
36. mercury(I) nitrate plus sodium carbonate



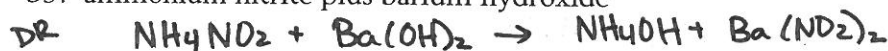
37. magnesium plus hydrochloric acid



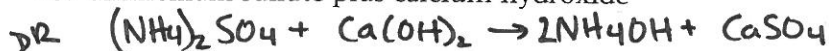
38. water (electrolyzed)



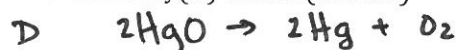
39. ammonium nitrite plus barium hydroxide



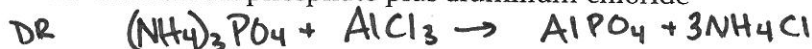
40. ammonium sulfate plus calcium hydroxide



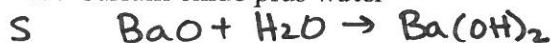
41. mercury(II) oxide (heated)



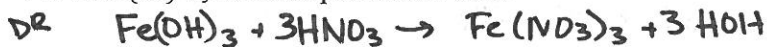
42. ammonium phosphate plus aluminum chloride



43. barium oxide plus water



44. iron(III) hydroxide plus nitric acid



45. calcium plus oxygen



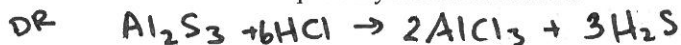
46. calcium plus phosphoric acid



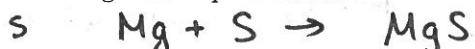
47. calcium chloride plus ammonium hydroxide



48. aluminum sulfide plus hydrochloric acid



49. magnesium plus sulfur



50. calcium plus aluminum chloride



(continued)



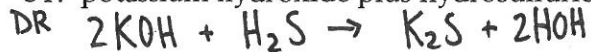
Chemistry Problems

## Reaction Prediction (continued)

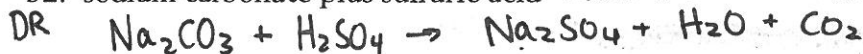
Name \_\_\_\_\_

Date \_\_\_\_\_

51. potassium hydroxide plus hydrosulfuric acid



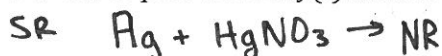
52. sodium carbonate plus sulfuric acid  $\rightarrow \text{H}_2\text{CO}_3$  breaks into  $\text{H}_2\text{O} + \text{CO}_2$



53. barium sulfate plus calcium chloride



54. silver plus mercury(I) nitrate



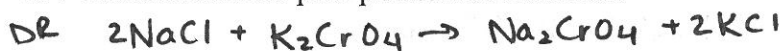
55. barium carbonate (heated)



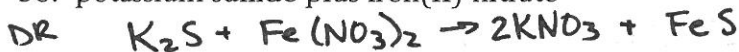
56. lithium plus bromine



57. sodium chloride plus potassium chromate



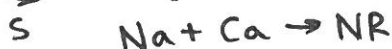
58. potassium sulfide plus iron(II) nitrate



59. iodine plus ammonium fluoride



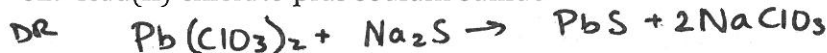
60. sodium plus calcium



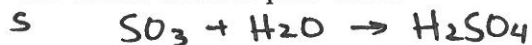
61. aluminum chloride (electrolyzed)



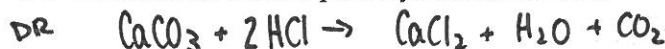
62. lead(II) chlorate plus sodium sulfide



63. sulfur trioxide plus water



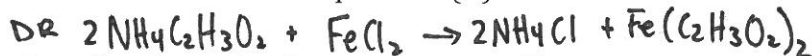
64. calcium carbonate plus hydrochloric acid



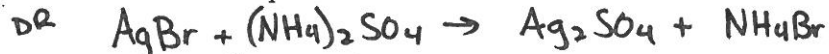
65. iron plus sodium bromide



66. ammonium acetate plus iron(II) chloride

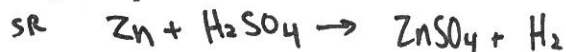


67. silver bromide plus ammonium sulfate



\*doesn't really happen

68. zinc plus sulfuric acid



(continued)



Chemistry Problems

## Reaction Prediction (continued)

Name \_\_\_\_\_

Date \_\_\_\_\_

69. neon plus potassium  
 S  $Ne + K \rightarrow NR$
70. iron plus potassium iodide  
 SR  $Fe + KI \rightarrow NR$
71. lead(II) hydroxide plus hydrochloric acid  
 DR  $Pb(OH)_2 + 2HCl \rightarrow PbCl_2 + 2HOH$
72. iron plus sulfur  
 S  $Fe + S \rightarrow FeS$
73. potassium chlorate (heated)  
 D  $2KClO_3 \rightarrow 2KCl + 3O_2$
74. oxygen plus chlorine  
 S  $2O_2 + Cl_2 \rightarrow 2ClO_2$
75. silver iodide plus iron(III) sulfide  
 DR  $6AgI + Fe_2S_3 \rightarrow 3Ag_2S + 2FeI_3$  \* doesn't actually happen
76. iron(II) carbonate plus phosphoric acid  
 DR  $3FeCO_3 + 2H_3PO_4 \rightarrow Fe_3(PO_4)_2 + 3H_2O + 3CO_2$
77. potassium iodide plus ammonium nitrate  
 DR  $KI + NH_4NO_3 \rightarrow KNO_3 + NH_4I$
78. potassium plus sodium nitrate (heated)  
 SR  $K + NaNO_3 \rightarrow KNO_3 + Na$
79. bromine plus sodium chloride  
 SR  $Br_2 + NaCl \rightarrow NR$
80. silver sulfide plus hydrochloric acid  
 DR  $Ag_2S + 2HCl \rightarrow 2AgCl + H_2S$
81. magnesium nitrate plus hydrochloric acid  
 DR  $Mg(NO_3)_2 + 2HCl \rightarrow MgCl_2 + 2HNO_3$
82. ammonia plus hydrogen chloride  
 S  $NH_3 + HCl \rightarrow NH_4Cl$
83. zinc hydroxide plus sulfuric acid  
 DR  $Zn(OH)_2 + H_2SO_4 \rightarrow ZnSO_4 + 2HOH$
84. calcium oxide plus water  
 S  $CaO + H_2O \rightarrow Ca(OH)_2$
85. sodium plus chlorine  
 S  $2Na + Cl_2 \rightarrow 2NaCl$
86. calcium hydroxide (heated)  
 D  $Ca(OH)_2 \rightarrow CaO + H_2O$

(continued)



Chemistry Problems

## Reaction Prediction (continued)

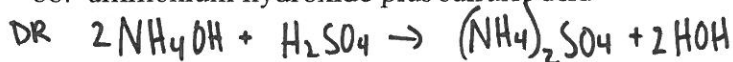
Name \_\_\_\_\_

Date \_\_\_\_\_

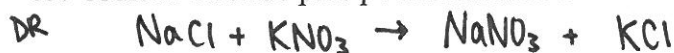
87. fluorine plus potassium bromide



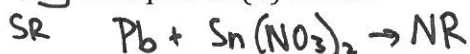
88. ammonium hydroxide plus sulfuric acid



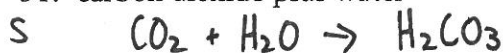
89. sodium chloride plus potassium nitrate



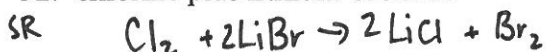
90. lead plus tin(II) nitrate



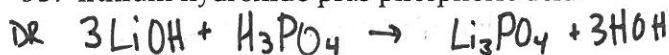
91. carbon dioxide plus water



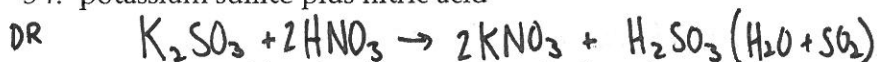
92. chlorine plus lithium bromide



93. lithium hydroxide plus phosphoric acid



94. potassium sulfite plus nitric acid



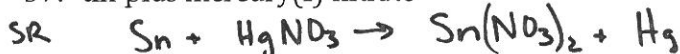
95. ammonium chloride plus potassium hydroxide



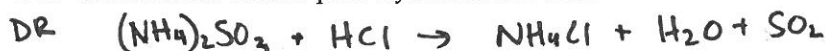
96. strontium carbonate plus nitric acid



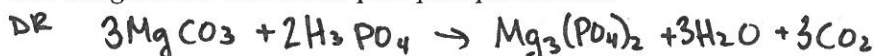
97. tin plus mercury(I) nitrate



98. ammonium sulfite plus hydrochloric acid



99. magnesium carbonate plus phosphoric acid



100. aluminum sulfite plus hydrochloric acid

