PRACTICE EQUATIONS WITH ANSWERS

The Diatomic Elements have two atoms per molecule when they are FREE (that is all by themselves):

H_2 O_2 N_2 Cl_2 Br_2 I_2 F_2

The other elements when free are Monatomic. Ex. Fe Zn Cu Co Al

Example of above: Iron + Bromine ---> Ferric bromide, $2Fe + 3Br_2$ ---> $2FeBr_3$

Common Acids: Sulfuric H_2SO_4, Nitric HNO_3, Acetic $HC_2H_3O_2$, Hydrochloric HCl, Phosphoric H_3PO_4

Write the correct formulae and balance the following reactions:
Watch out for Diatomic Elements and be sure your formulas are correct!!!
*** THEN... CHECK EACH ANSWER BELOW ***

Synthesis reactions--
(Elements combine to form a compound):
1. Sodium + Chlorine ---> Sodium chloride
2. Magnesium + Oxygen ---> Magnesium oxide
3. Iron + Sulfur ---> Ferric sulfide
4. Cobalt + Bromine --->

Decomposition reactions--
(A compound breaks up into its elements):
5. Nickel chloride ---> Nickel + Chlorine
6. Aluminum hydroxide ---> Al + O_2 + H_2
7. Sulfuric acid --->
8. Ammonium hydroxide --->

Single Displacement--
(An element replaces another from a compound):
9. Aluminum + Cupric nitrate ---> Aluminum nitrate + Copper
10. Zinc + Hydrochloric acid --->
11. Sodium + Water ---> Sodium hydroxide + Hydrogen
12. Cobalt + Calcium sulfide --->

Double displacement--
(Two compounds react and exchange partners):
13. Ferric chloride + Cobalt hydroxide ---> Ferric hydroxide + Cobalt chloride
14. Silver nitrate + Manganese silicate --->
15. Magnesium carbonate + Sulfuric acid --->

Hydrolysis reactios--
(Add water as HOH):
16. Potassium acetate + Water ---> Potassium hydroxide + Hydrogen acetate

17. Ferrous iodide + Water --->
18. Ammonium sulfate + Water --->

Mixed reactions--

19. Aluminum + Ferric oxide --->
20. Silver sulfate + Copper --> Cupric sulfate +?
21. Mercury + Nitric acid --->
22. Sodium hydroxide + Zinc phosphate --->
23. Potassium + water (HOH) --->
24. Combustion of C_8H_{18} (burn it)
25. Lead nitrate + Sulfuric acid --->
26. Cadmium chromate + Arsenic oxide --->
27. Silver sulfide + Silicon permanganate--->
28. Carbon nitrate + Barium dichromate --->
29. Combustion of C_7H_{16} (burn it)
30. Arsenic cyanide ---->
31. Sodium nitride + Bromine --->
32. Ferrous sulfide + Strontium iodide --->
33. Hydrogen + Oxygen ---> Water
34. Antimony + Lead fluoride --->
35. Aluminum bicarbonate --->
36. Ammonium ferrocyanide + Cobalt oxide --->
37. Silver chromate + Arsenic thiocyanate --->
38. Water --->
39. Nickel nitride + Cobalt hydroxide --->
40. Sodium iodide --->

Answers to Equations Practice

WRITE THEM FIRST!!! , Then check them out

1. $2\ Na + Cl_2 \rightarrow 2\ NaCl$
2. $2\ Mg + O_2 \rightarrow 2\ MgO$
3. $2\ Fe + 3\ S \rightarrow Fe_2S_3$
4. $Co + Br_2 \rightarrow CoBr_2$
5. $NiCl_2 \rightarrow Ni + Cl_2$
6. $2\ Al(OH)_3 \rightarrow 2\ Al + 3\ O_2 + 3\ H_2$
7. $H_2SO_4 \rightarrow H_2 + S + 2\ O_2$
8. $2\ NH_4OH \rightarrow N_2 + 5\ H_2 + O_2$
9. $2\ Al + 3\ Cu(NO_3)_2 \rightarrow 2\ Al(NO_3)_3 + 3\ Cu$

10. $Zn + 2\ HCl \rightarrow ZnCl_2 + H_2$
11. $2\ Na + 2\ HOH \rightarrow 2\ NaOH + H_2$
12. $Co + CaS \rightarrow CoS + Ca$
13. $2\ FeCl_3 + 3\ Co(OH)_2 \rightarrow 2\ Fe(OH)_3 + 3\ CoCl_2$
14. $4\ AgNO_3 + Mn_2SiO_4 \rightarrow Ag_4SiO_4 + 2Mn(NO_3)_2$
15. $MgCO_3 + H_2SO_4 \rightarrow MgSO_4 + H_2CO_3$
16. $KC_2H_3O_2 + HOH \rightarrow KOH + HC_2H_3O_2$
17. $FeI_2 + 2\ HOH \rightarrow Fe(OH)_2 + 2\ HI$
18. $(NH_4)_2SO_4 + 2\ HOH \rightarrow 2\ NH_4OH + H_2SO_4$
19. $2\ Al + Fe_2O_3 \rightarrow Al_2O_3 + 2\ Fe$
20. $Ag_2SO_4 + Cu \rightarrow CuSO_4 + 2\ Ag$
21. $2\ Hg + 2\ HNO_3 \rightarrow 2\ HgNO_3 + H_2$
22. $6\ NaOH + Zn_3(PO_4)_2 \rightarrow 3\ Zn(OH)_2 + 2\ Na_3PO_4$
23. $2\ K + 2\ HOH \rightarrow 2\ KOH + H_2$
24. $2\ C_8H_{18} + 25\ O_2 \rightarrow 16\ CO_2 + 18\ H_2O$
25. $Pb(NO_3)_2 + H_2SO_4 \rightarrow PbSO_4 + 2\ HNO_3$
26. $3\ CdCrO_4 + As_2O_3 \rightarrow As_2(CrO_4)_3 + 3\ CdO$
27. $2\ Ag_2S + Si(MnO_4)_4 \rightarrow 4\ AgMnO_4 + SiS_2$
28. $C(NO_3)_4 + 2\ BaCr_2O_7 \rightarrow 2\ Ba(NO_3)_2 + C(Cr_2O_7)_2$
29. $C_7H_{16} + 11\ O_2 \rightarrow 7\ CO_2 + 8\ H_2O$
30. $2\ As(CN)_3 \rightarrow 2\ As + 6\ C + 3\ N_2$
31. $2\ Na_3N + 3\ Br_2 \rightarrow 6\ NaBr + N_2$
32. $FeS + SrI_2 \rightarrow FeI_2 + SrS$
33. $2\ H_2 + O_2 \rightarrow 2\ H_2O$
34. $2\ Sb + 3\ PbF_2 \rightarrow 2\ SbF_3 + 3\ Pb$
35. $2\ Al(HCO_3)_3 \rightarrow 2\ Al + 3\ H_2 + 6\ C + 9\ O_2$
36. $(NH_4)_4Fe(CN)_6 + 2\ CoO \rightarrow Co_2Fe(CN)_6 + 2\ (NH_4)_2O$
37. $3\ Ag_2CrO_4 + 2\ As(SCN)_3 \rightarrow 6\ AgSCN + As_2(CrO_4)_3$
38. $2\ H_2O \rightarrow 2\ H_2 + O_2$
39. $Ni_3N_2 + 3\ Co(OH)_2 \rightarrow Co_3N_2 + 3\ Ni(OH)_2$
40. $2NaI \rightarrow 2\ Na + I_2$