

Name: Key Class: _____ Date: _____

Predicting Products of Chemical Reactions #3

For the first few reactions, the type of reaction is listed, you should predict the products, then balance. For the remaining questions, include the reaction type. **You may want to re-write these on a separate sheet of paper!**

Although states (s, l, g, aq) of the reactants and products are very important in a chemical reaction, don't worry about determining those for these problems. Rather, focus on what products result from the reactants given.

1. Combustion: $C_6H_{12} + 9 O_2 \rightarrow 6CO_2 + 6H_2O$
2. Synthesis: $Mg + I_2 \rightarrow MgI_2$
3. Decomposition: $ZnCO_3 + \text{heat} \rightarrow ZnO + CO_2$
4. Single replacement: $2HCl + Zn \rightarrow ZnCl_2 + H_2$
5. Double replacement: $CuCl_2 + H_2S \rightarrow CuS + 2HCl$
6. DR $NaOH + HClO_4 \rightarrow HOH + NaClO_4$
7. SR $2Na + MgCl_2 \rightarrow 2NaCl + Mg$
8. DR $2NaI + HgCl_2 \rightarrow 2NaCl + HgI_2$
9. C $C_6H_{10}O_3 + 7 O_2 \rightarrow 6CO_2 + 5H_2O$
10. S $2K + Cl_2 \rightarrow 2KCl$
11. DR $3BaCl_2 + 2K_3PO_4 \rightarrow Ba_3(PO_4)_2 + 6KCl$
12. DR $H_2SO_4 + 2KOH \rightarrow 2HOH + K_2SO_4$
13. DR $Cd(NO_3)_2 + Na_2S \rightarrow CdS + 2NaNO_3$
14. S $4Al + 3O_2 \rightarrow 2Al_2O_3$
15. D $2KClO_3 + \text{heat} \rightarrow 2KCl + 3O_2$
16. SR $Na_2SO_4 + Cu \rightarrow NR$
17. SR $Ca + 2AgCl \rightarrow CaCl_2 + 2Ag$
18. DR $H_3PO_4 + FeBr_3 \rightarrow 3HBr + FePO_4$
19. C $2C_4H_6 + 11O_2 \rightarrow 8CO_2 + 6H_2O$
20. S $6Li + N_2 \rightarrow 2Li_3N$
21. SR $2Na + 2HNO_3 \rightarrow H_2 + 2NaNO_3$
22. D $Mg(OH)_2 + \text{heat} \rightarrow MgO + H_2O$
23. D $2NI_3 \rightarrow N_2 + 3I_2$