Predicting Products of Chemical Reactions

This worksheet is designed to help you predict products of simple reactions of the four basic reaction types: combination, decomposition, single-replacement, and double-replacement and combustion reactions.

For the first two reactions, the type of reaction is listed, you should predict the products, then balance. Further questions will have the reaction type listed and you should be able to see the type of reaction, or not, in the reactants provided. Many of these reactions will take the categories of other reactions, though do not let that confuse you - you can be asked to name all the four basic reaction types into up the combustion reaction.

Although states (s, l, g, aq) of the reactants and products are very important in a chemical reaction, don't worry about determining these for these problems. Further, the ions or other products might result from the reactants given. The particular situation in the above charge of species that you know have ions with only one possible charge: i.e. alkali metals, alkaline earth metals, halogens, etc.)

1. Combustion: C_3H_8 + O_2 →
2. Combustion: C_2H_6 + O_2 →
3. Combustion: $C_6H_{12}O_6$ + O_2 →

4. Synthesis: Mg + I_2 →
5. Double displacement: $CuCl_2$ + NaS →
6. Double displacement: Na_2SO_4 + $BaCl_2$ →
7. Decomposition: $Sn(CO_3)_2$ + $NaOH$ →
8. Single replacement: HCl + Zn →
9. _____ Na + $MgCl_2$ →
10. _____ $CuCl_2$ + $Al_2(SO_4)_3$ →
11. _____ Al + CO_2 →
12. _____ $BaCl_2$ + Na_3PO_4 →
13. _____ Na_2SO_4 + H_2O →
14. _____ $Al(ClO_3)_3$ + Sn →
15. _____ Na_2SO_4 + $BaCl_2$ →
16. _____ Cu + $AgCl$ →
17. _____ $Mg(NO_3)_2$ + $NaBr_2$ →
18. _____ Cu + H_2 →
19. _____ HCl + $Mg_3(PO_4)_2$ →
20. _____ $Mg_3(PO_4)_2$ + $NaOH$ →