Predicting Products Worksheet

1) Complete and balance the following **synthesis** reactions

a) $Na + O_2 \rightarrow$

b) $Mg + F_2 \rightarrow$

c) potassium and chlorine yield

d) strontium and nitrogen yield

2) Complete and balance the following **single displacement** reactions

a) $Zn + Pb(NO_3)_2 \rightarrow$

b) $Al + Ca(CH_3COO)_2 \rightarrow$

c) Aluminum and nickel (II) sulfate yield

d) sodium and water yield

3) Complete and balance the following **double displacement** reactions

a) $AgNO_3 + NaCl \rightarrow$

b) $Mg(NO_3)_2 + KOH \rightarrow$

c) lithium hydroxide and iron (III) nitrate

d) calcium hydride and water yield

4) Complete and balance the following **combustion** reactions

a) $C_2H_2 + O_2 \rightarrow$

b) $CH_4 + O_2 \rightarrow$

c) dicarbon hexahydride and oxygen yield

d) tricarbon octahydride and oxygen yield

5) Identify the type of reaction. Then, write the full chemical equation and balance it.

a) zinc and sulfur yield

b) silver nitrate and potassium iodide yield

c) zinc and hydrochloric acid yield

d) $C_7H_8 + O_2 \rightarrow$

6) Based on the activity series, circle the element within each pair that is more likely to replace the other in a compound.

a) K and Na

b) Al and Ni

c) Cl and F

d) Bi and Cr

e) Au and Ag

f) Cl and I

7) Using the activity series, predict whether each of the possible reactions listed below will occur. For the reactions that will occur, write the products and balance the equation:

a) $Ni + CuCl_2 \rightarrow$

b) $Zn + Pb(NO_3)_2 \rightarrow$

c) $Cl_2 + NaI \rightarrow$

d) $Cu + FeSO_4 \rightarrow$

e) $Ba(s) + H_2O(l) \rightarrow$

f) $Al + CaO \rightarrow$

g) $Pb + ZnCl_2 \rightarrow$

h) $Ni + H_2O \rightarrow$

i) $Br_2 + KI \rightarrow$

j) $Au + HCl \rightarrow$

k) $Cd + HCl \rightarrow$

l) $Mg + Co(NO_3)_2 \rightarrow$