General Chemistry
Mr. MacGillivray
Worksheet:
Predicting Single Replacement Reactions

For each of the following reactions,

- PREDICT whether or not the reaction will occur. Use the activity series to determine this. If the reaction will not occur, write "NO REACTION."
- If the reaction occurs, WRITE THE CORRECT FORMULAS for the reactants and products.
  - Remember: the following elements are diatomic: H_2, N_2, O_2, F_2, Cl_2, Br_2, I_2.
  - Use the chart of polyatomic ions and transition metals if necessary.
- BALANCE the equation.
- #1 and # 5 are done already as examples.

1. $Ni + CuCl_2 \rightarrow Cu + NiCl_2$

2. $Zn + Pb(NO_3)_2 \rightarrow$

3. $Cl_2 + KI \rightarrow$

4. $Cu + FeSO_4 \rightarrow$

5. $Ba + HOH \rightarrow Ba(OH)_2 + H_2$

6. calcium + sodium nitrate $\rightarrow$

7. zinc + lead (II) nitrate $\rightarrow$

8. aluminum + mercury (II) acetate $\rightarrow$

9. $Al + NiSO_4 \rightarrow$

10. sodium + water $\rightarrow$ (similar to #5)

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- BALANCE the equation.
- #1 and # 5 are done already as examples.

1. $Ni + CuCl_2 \rightarrow Cu + NiCl_2$

2. $Zn_{(s)} + Pb(NO_3)_{2(aq)} \rightarrow Zn(NO_3)_{2(aq)} + Pb_{(s)}$

3. $Cl_{2(g)} + 2KI_{(aq)} \rightarrow 2KCl_{(aq)} + I_{2(s)}$

4. $Cu + FeSO_4 \rightarrow$ NO RXN

5. $Ba_{(s)} + 2HOH_{(l)} \rightarrow Ba(OH)_{2(aq)} + H_{2(g)}$

6. calcium + sodium nitrate →
$Ca_{(s)} + 2NaNO_{3(aq)} \rightarrow Ca(NO_3)_{2(aq)} + 2Na_{(s)}$

7. zinc + lead (II) nitrate →
$Zn_{(s)} + Pb(NO_3)_{2(aq)} \rightarrow Zn(NO_3)_{2(aq)} + Pb_{(s)}$

8. aluminum + mercury (II) acetate →
$2Al_{(s)} + 3Hg(C_2H_3O_2)_{2(aq)} \rightarrow 2Al(C_2H_3O_2)_{3(aq)} + 3Hg_{(l)}$

9. $Al + NiSO_4 \rightarrow$
$2Al_{(s)} + 3NiSO_{4(aq)} \rightarrow Al_2(SO_4)_{3(aq)} + 3Ni$

10. sodium + water → (similar to #5)
$2Na_{(s)} + 2HOH_{(l)} \rightarrow 2NaOH_{(aq)} + H_{2(g)}$