

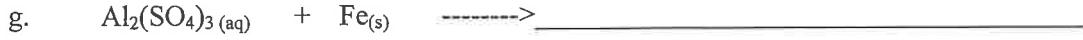
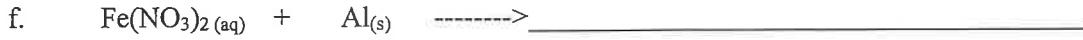
## WS 8.5 Single Replacement Reactions!

Name: \_\_\_\_\_ p. \_\_\_\_\_

Explain how you can use the activity series to determine whether a single replacement reaction can occur:

Complete the reactions in sections 1-3. Balance and include phase subscripts.

## 1. Reactions between metals and ionic compounds, or between metals and acids:

**Activity Series**  
(for metals and hydrogen)Li  
K  
Ba  
Sr  
Ca  
Na  
Mg  
Al  
 $\text{H}(\text{H}_2\text{O})$   
Zn  
Cr  
Fe  
Co  
Ni  
Sn  
Pb  
H(acid)

## 2. Reaction between metals with water:

Cu  
Ag  
Hg  
Pt  
Au**Activity Series**  
(for halogens)

## 3. Reactions between halogens and ionic compounds:



\_\_\_\_\_



\_\_\_\_\_



4. Mixed Practice! (Predict products, balance the rxns, and do phase subscripts! None are N.R.)

- a.  $\text{Al}_{(s)} + \text{CuBr}_{2(aq)} \longrightarrow$  \_\_\_\_\_
- b.  $\text{Cl}_{2(g)} + \text{CuBr}_{2(aq)} \longrightarrow$  \_\_\_\_\_
- c.  $\text{Ni}_{(s)} + \text{HI}_{(aq)} \longrightarrow$  \_\_\_\_\_
- d.  $\text{Sn}(\text{SO}_4)_{2(aq)} + \text{Al}_{(s)} \longrightarrow$  \_\_\_\_\_
- e.  $\text{H}_2\text{O}_{(l)} + \text{Mg}_{(s)} \longrightarrow$  \_\_\_\_\_
- f.  $\text{NaI}_{(aq)} + \text{Br}_{2(l)} \longrightarrow$  \_\_\_\_\_

Activity Series  
(for metals and hydrogen)

Li  
K  
Ba  
Sr  
Ca  
Na  
Mg  
Al  
 $\text{H}(\text{H}_2\text{O})$   
Zn  
Cr

Fe  
Co  
Ni  
Sn  
Pb  
 $\text{H}(\text{acid})$   
Cu  
Ag  
Hg  
Pt  
Au

5. More mixed practice! (Predict products, balance the rxns, and do phase subscripts! Three are N.R.)

- a.  $\text{K}_{(s)} + \text{Al}(\text{NO}_3)_{3(aq)} \longrightarrow$  \_\_\_\_\_
- b.  $\text{KF}_{(aq)} + \text{Br}_{2(l)} \longrightarrow$  \_\_\_\_\_
- c.  $\text{K}_{(s)} + \text{H}_2\text{O}_{(l)} \longrightarrow$  \_\_\_\_\_
- d.  $\text{Co}_{(s)} + \text{H}_2\text{O}_{(l)} \longrightarrow$  \_\_\_\_\_
- e.  $\text{Li}_{(s)} + \text{CoSO}_4_{(aq)} \longrightarrow$  \_\_\_\_\_
- f.  $\text{Pt}_{(s)} + \text{Ag}_2\text{SO}_4_{(aq)} \longrightarrow$  \_\_\_\_\_
- g.  $\text{HNO}_3_{(aq)} + \text{Co}_{(s)} \longrightarrow$  \_\_\_\_\_
- h.  $\text{LiBr}_{(aq)} + \text{Cl}_{2(g)} \longrightarrow$  \_\_\_\_\_
- i.  $\text{AuNO}_3_{(aq)} + \text{Mg}_{(s)} \longrightarrow$  \_\_\_\_\_

6. Complete the following reactions. You don't need to balance the equations.

(DO balance ion charges in formulas though, as always!!!!)

Include subscripts on any ELEMENTS that form. One of these are N.R.

- a.  $\text{HBr}_{(aq)} + \text{Fe}_{(s)} \longrightarrow$  \_\_\_\_\_ (assume that ferric ion forms)
- b.  $\text{HC}_2\text{H}_3\text{O}_2_{(aq)} + \text{Zn}_{(s)} \longrightarrow$  \_\_\_\_\_
- c.  $\text{Al}_2(\text{SO}_4)_{3(aq)} + \text{Li}_{(s)} \longrightarrow$  \_\_\_\_\_
- d.  $\text{Sn}_{(s)} + \text{ZnCl}_{2(aq)} \longrightarrow$  \_\_\_\_\_
- e.  $\text{Zn}_{(s)} + \text{Sn}(\text{NO}_3)_{4(aq)} \longrightarrow$  \_\_\_\_\_
- f.  $\text{Li}_{(s)} + \text{H}_2\text{O}_{(l)} \longrightarrow$  \_\_\_\_\_
- g.  $\text{CrCl}_3_{(aq)} + \text{Mg}_{(s)} \longrightarrow$  \_\_\_\_\_
- h.  $\text{Cl}_{2(g)} + \text{KI}_{(aq)} \longrightarrow$  \_\_\_\_\_