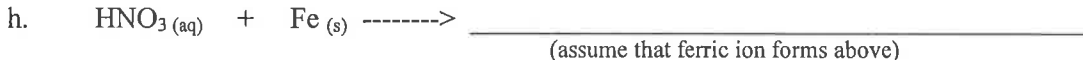




Explain how you can use the activity series to determine whether a single replacement reaction can occur:

Complete the reactions in sections 1 and 2. Balance and include phase subscripts.

1. Reaction of metals with ionic compounds or with acids:



Activity Series
 (for metals and hydrogen)

- Li
- K
- Ba
- Sr
- Ca
- Na
- Mg
- Al
- H(H₂O)
- Zn
- Cr
- Fe
- Co
- Ni
- Sn
- Pb
- H(acid)
- Cu
- Ag
- Hg
- Pt
- Au

2. Reaction of metals with water:



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

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

Include subscripts on any ELEMENTS that form. 5 of these are N.R.

For this W.S. only, if the metal reacting can form an -ic ion and an -ous ion, assume that the -ous ion forms.



- f. $\text{Sn}_{(s)} + \text{ZnCl}_{2(aq)} \text{----->}$ _____
- g. $\text{ZnSO}_{4(aq)} + \text{K}_{(s)} \text{----->}$ _____
- h. $\text{HCl}_{(aq)} + \text{Au}_{(s)} \text{----->}$ _____
- i. $\text{HC}_2\text{H}_3\text{O}_2(aq) + \text{Zn}_{(s)} \text{----->}$ _____
- j. $\text{Zn}_{(s)} + \text{Sn}(\text{NO}_3)_4(aq) \text{----->}$ _____
- k. $\text{Hg}_{(s)} + \text{CrCl}_3(aq) \text{----->}$ _____
- l. $\text{Na}_{(s)} + \text{H}_3\text{PO}_4(aq) \text{----->}$ _____
- m. $\text{CrCl}_3(aq) + \text{Mg}_{(s)} \text{----->}$ _____
- n. $\text{CO}_{(s)} + \text{H}_2\text{O}_{(l)} \text{----->}$ _____

Activity Series
(for metals and hydrogen)

Li
K
Ba
Sr
Ca
Na
Mg
Al
H(H₂O)
Zn
Cr
Fe
Co
Ni
Sn
Pb
H(acid)
Cu
Ag
Hg
Pt
Au

4. Single Replacement Reactions where the Element Reacting is a nonmetal: (balance + ss)

- a. $\text{F}_{2(g)} + \text{NaCl}_{(aq)} \text{----->}$ _____
- b. $\text{Cl}_{2(g)} + \text{AlF}_3(aq) \text{----->}$ _____
- c. $\text{Cl}_{2(g)} + \text{AlBr}_3(aq) \text{----->}$ _____

5. All the kinds of single replacements! (Balance and do phase subscripts!)

- a. $\text{Al}_{(s)} + \text{CuBr}_{2(aq)} \text{----->}$ _____
- b. $\text{F}_{2(g)} + \text{CuBr}_{2(aq)} \text{----->}$ _____
- c. $\text{Ni}_{(s)} + \text{HI}_{(aq)} \text{----->}$ _____
- d. $\text{Sn}(\text{SO}_4)_2(aq) + \text{Al}_{(s)} \text{----->}$ _____
- e. $\text{H}_2\text{O}_{(l)} + \text{Mg}_{(s)} \text{----->}$ _____
- f. $\text{NaI}_{(aq)} + \text{Br}_{2(l)} \text{----->}$ _____
- g. $\text{K}_{(s)} + \text{Al}(\text{NO}_3)_3(aq) \text{----->}$ _____
- h. $\text{KF}_{(aq)} + \text{Br}_2(l) \text{----->}$ _____
- i. $\text{Li}_{(s)} + \text{CoSO}_4(aq) \text{----->}$ _____
- j. $\text{Pt}_{(s)} + \text{Ag}_2\text{SO}_4(aq) \text{----->}$ _____
- k. $\text{HNO}_3(aq) + \text{Co}_{(s)} \text{----->}$ _____
- l. $\text{LiBr}_{(aq)} + \text{F}_2(g) \text{----->}$ _____
- m. $\text{AuNO}_3(aq) + \text{Mg}_{(s)} \text{----->}$ _____

Activity Series
(for halogens)

