Exercise 11.2
Naming Ionic Compounds Containing Oxoanions

1. You will make your life much easier by learning a few general rules regarding relationships between oxoanion (and oxoacid) names. Note that you will have to memorize the "ate" oxoanions (nitrate, sulfate, phosphate, carbonate and chlorate) or learn them unconsciously by practicing a lot; there is no way around that.

   Fill in the blanks in the statements below. Remember to include all non-zero charges!

(a) The sulfate ion is _____ therefore the sulfite ion is _____.

(b) The nitrate ion is _____ therefore the nitrite ion is _____.

(c) The chlorate ion is _____ therefore the chlorite ion is _____and the hypchlorite ion is _____.

(d) The chlorate ion is _____ therefore the bromate ion is _____.

(e) The bromate ion is _____ therefore the perbromate ion is _____.

(f) The carbonate ion is _____ therefore hydrogen carbonate is _____ and carbonic acid is _____.

(g) The sulfate ion is _____ therefore hydrogen sulfate is _____ and sulfuric acid is _____.

(h) The sulfite ion is _____ therefore hydrogen sulfite is _____ and sulfurous acid is _____.

(i) The phosphate ion is _____ therefore phosphoric acid is_____.

(j) The phosphite ion is _____ therefore phosphorous acid is _____.

2. Name each of the following compounds:

(a) $FeSO_3$ (b) $Ca(NO_2)_2$

(c) $Cr(ClO_4)_3$ (d) $LiHCO_3$

3. Give the formula for each of the following compounds:

(a) cobalt(II) carbonate (b) sodium hypchlorite

(c) scandium(III) sulfate (d) potassium dihydrogen phosphate