**8.** Name the following compounds.

**a.** $Mg(OH)_2$ **d.** $ZnCl_2$ **g.** $NH_4MgPO_4$
**b.** $CaO$ **e.** $Na_3P$ **h.** $KNO_2$
**c.** $LiCH_3COO$ **f.** $K_2Se$ **i.** $KNaCO_3$

**9.** Name the following compounds.

**a.** $Na_2SO_4$ **d.** $NH_4CH_3COO$ **g.** $CaC_2O_4$
**b.** $AgNO_3$ **e.** $KClO_4$ **h.** $BaCO_3$
**c.** $ZnCr_2O_7$ **f.** $NH_4ClO_3$ **i.** $NaH_2PO_4$

**10.** Write formulas for the following compounds.

**a.** manganese(III) chloride **f.** tin(IV) oxide
**b.** iron(III) bromide **g.** chromium(III) oxide
**c.** chromium(III) bromide **h.** lead(II) oxide
**d.** tin(IV) chloride **i.** manganese(VII) oxide
**e.** manganese(II) bromide **j.** mercury(I) oxide

**11.** Name the following compounds. (Roman numeral system)

**a.** $TiCl_2$ **f.** $Sb_2O_5$ **k.** $BiF_5$
**b.** $TiBr_4$ **g.** $CrO_3$ **l.** $NiBr_2$
**c.** $CuCl$ **h.** $Mn_3O_4$ **m.** $CuBr_2$
**d.** $PbI_2$ **i.** $TiO_2$ **n.** $PbCl_2$
**e.** $SnCl_4$ **j.** $PbO$ **o.** $CrF_3$

**12.** Name the following compounds. (Roman numeral system)

**a.** $Fe_2(SO_4)_3$ **f.** $Hg(IO_3)_2$
**b.** $Cr(OH)_2$ **g.** $Pb(ClO_2)_2$
**c.** $Hg_2(ClO_3)_2$* **h.** $Cu(CH_3COO)_2$
**d.** $Fe(ClO_4)_2$ **i.** $Cu_2SO_4$
**e.** $MnSO_4$ **j.** $CoSO_4$

**13.** Write formulas for the following compounds.

**a.** copper(II) chlorate **f.** chromium(III) sulfate
**b.** bismuth(III) telluride **g.** iron(II) hydroxide
**c.** manganese(III) sulfate **h.** copper(II) phosphate
**d.** iron(III) nitrate **i.** mercury(I) nitrite
**e.** tin(IV) nitrate **j.** lead(II) nitrate

**14.** Write formulas for the following compounds.

**a.** dichlorine oxide **d.** chlorine trifluoride
**b.** chlorine dioxide **e.** dichlorine heptoxide
**c.** carbon disulfide **f.** sulfur hexafluoride

**15.** Name the following compounds. (Greek prefixes)

**a.** $CO_2$ **d.** $PCl_3$
**b.** $NO_2$ **e.** $NO$
**c.** $SO_3$ **f.** $P_2O_5$

*Mercury exists as $Hg_2^{2+}$, mercury (I), in which two mercury atoms are bound together. It also exists as $Hg^{2+}$, mercury(II).

## PROBLEMS

**17.** Write the number of formula units represented by the following.

**a.** $5NaCl$
**b.** $H_2O$
**c.** $6MgCl_2$
**d.** $ZnSO_4$
**e.** $2CuSO_4$
**f.** $12Pb(NO_3)_2$

**18.** Determine the number of atoms of each element in the following.

**a.** $7H_2O$
**b.** $2(NH_4)_3PO_4$
**c.** $4Al_2O_3$
**d.** $3CuSO_4$

## CHAPTER REVIEW PROBLEMS

*Write the formula for each of the following compounds.*

**1. a.** sodium nitrite
**b.** sodium carbonate
**c.** sodium sulfate
**d.** potassium hydroxide
**e.** potassium nitrate
**f.** potassium sulfite
**g.** potassium phosphate
**h.** cadmium oxalate
**i.** cadmium carbonate
**j.** cadmium sulfate
**k.** cadmium phosphate
**l.** aluminum bromide
**m.** aluminum nitrate
**n.** aluminum sulfide

**2. a.** magnesium nitrate
**b.** magnesium sulfate
**c.** magnesium carbonate
**d.** barium bromide
**e.** barium nitrate
**f.** barium sulfate
**g.** iron(II) oxide
**h.** iron(II) hydroxide
**i.** iron(II) carbonate
**j.** iron(II) sulfate
**k.** iron(III) phosphate
**l.** iron(III) bromide

**3. a.** strontium chloride
**b.** strontium hydroxide
**c.** strontium nitrate
**d.** strontium sulfite
**e.** strontium sulfide
**f.** iron(III) sulfate
**g.** iron(III) phosphate
**h.** mercury(II) bromide
**i.** mercury(II) carbonate
**j.** mercury(II) sulfide

*Write the name for each of the following compounds.*

**4. a.** $NaNO_3$
**b.** $Na_2SO_3$
**c.** $Na_3PO_4$
**d.** $KNO_2$
**e.** $K_2CO_3$
**f.** $K_2SO_4$
**g.** $CdBr_2$
**h.** $Cd(NO_3)_2$
**i.** $CdSO_3$
**j.** $CdS$
**k.** $AlCl_3$
**l.** $Al(OH)_3$

**5. a.** $Mg(NO_2)_2$
**b.** $MgSO_3$
**c.** $Mg_3(PO_4)_2$
**d.** $Ba(NO_2)_2$
**e.** $BaSO_3$
**f.** $BaCO_3$
**g.** $Al_2(SO_4)_3$
**h.** $AlPO_4$
**i.** $FeBr_2$
**j.** $Fe(NO_3)_2$
**k.** $FeSO_3$
**l.** $FeS$

**6. a.** $Ba_3(PO_4)_2$
**b.** $SrBr_2$
**c.** $Sr(NO_3)_2$
**d.** $SrCO_3$
**e.** $SrSO_4$
**f.** $Sr_3(PO_4)_2$
**g.** $FeCl_3$
**h.** $Fe(NO_3)_3$
**i.** $Fe_2S_3$
**j.** $HgCl_2$
**k.** $Hg(NO_3)_2$
**l.** $HgSO_4$

7. Write the formula for each of the following compounds.
   - **a.** sodium hydroxide
   - **b.** mercury(II) sulfate
   - **c.** calcium hypochlorite
   - **d.** lead(II) phosphate
   - **e.** aluminum chlorate
   - **f.** ammonium sulfide
   - **g.** copper(I) carbonate
   - **h.** mercury(I) sulfide
   - **i.** lead(II) acetate
   - **j.** manganese(IV) oxide
   - **k.** manganese(II) sulfate
   - **l.** silver oxide
   - **m.** zinc nitrate
   - **n.** chromium(III) sulfite
   - **o.** ammonium dichromate
   - **p.** iron(III) oxide

8. Write the names for each of the following compounds.
   - **a.** $NaCH_3COO$
   - **b.** $Ni(NO_3)_2$
   - **c.** $Hg_2Cl_2$
   - **d.** $Sn_3(PO_4)_2$
   - **e.** $Cr(OH)_2$
   - **f.** $Zn(ClO_3)_2$
   - **g.** $MgBr_2$
   - **h.** $CuN_3$
   - **i.** $CaH_2$
   - **j.** $Ba(NO_2)_2$
   - **k.** MnS
   - **l.** $Sn(NO_3)_4$
   - **m.** $(NH_4)_2SO_4$
   - **n.** PbO
   - **o.** KCN

9. Write the formula for each of the following compounds.
   - **a.** magnesium nitrate
   - **b.** silver acetate
   - **c.** barium perchlorate
   - **d.** potassium nitrite
   - **e.** ammonium sulfate
   - **f.** ammonium dichromate
   - **g.** barium molybdate
   - **h.** zinc thiocyanate

10. Write the name for each of the following compounds.
    - **a.** $FeSO_4$
    - **b.** $NH_4ClO_3$
    - **c.** $Fe(CH_3COO)_2$
    - **d.** $CuCrO_4$
    - **e.** $Mg(NO_3)_2$
    - **f.** $AlPO_4$
    - **g.** $Na_2SO_3$
    - **h.** $Ca(ClO_2)_2$
    - **i.** $(NH_4)_2CO_3$
    - **j.** $Ag_2CrO_4$
    - **k.** $Ba_3(PO_4)_2$
    - **l.** $KClO_4$

11. Write the formula for each of the following compounds.
    - **a.** zinc hexafluorosilicate
    - **b.** antimony(V) sulfide
    - **c.** bismuth(III) telluride
    - **d.** titanium(IV) iodide
    - **e.** nickel(II) fluoride
    - **f.** manganese(IV) oxide
    - **g.** lead(IV) oxide
    - **h.** calcium tartrate
    - **i.** mercury(II) oxide
    - **j.** cobalt(III) oxide

12. Write the name for each of the following compounds
    - **a.** $Zn(SCN)_2$
    - **b.** $Sb_2O_5$
    - **c.** TiO
    - **d.** InP
    - **e.** $Mn_2O_3$
    - **f.** $Cr(CH_3COO)_3$

13. Write the empirical formula for each of the following.
    - **a.** $C_6H_{14}$
    - **b.** $CO_2$
    - **c.** $N_2F_4$
    - **d.** $C_3H_6Cl_2$
    - **e.** $C_5H_{10}O_2$
    - **f.** $P_3N_3Cl_6$

14. Write the number of formula units expressed by each of the following.
    - **a.** $5H_2O$
    - **b.** $9O_2$
    - **c.** $3(NH_4)_2SO_4$
    - **d.** $6NF_3$
    - **e.** $C_{12}H_{22}O_{11}$
    - **f.** $4Fe_2O_3$