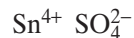


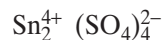
## SAMPLE PROBLEM C

Write the formula for tin(IV) sulfate.

**SOLUTION** Write the symbols for the ions side by side. Write the cation first.



Cross over the charges to give subscripts. Add parentheses around the polyatomic ion if necessary.



Check the subscripts and write the formula.

The total positive charge is  $2 \times 4+ = 8+$ . The total negative charge is  $4 \times 2- = 8-$ .

The charges are equal. The largest common factor of the subscripts is 2, so the smallest whole-number ratio of ions in the compound is 1:2. The correct formula is therefore  $\text{Sn}(\text{SO}_4)_2$ .

## PRACTICE

Answers in Appendix E

- Write formulas for the following ionic compounds:
  - sodium iodide
  - calcium chloride
  - potassium sulfide
  - lithium nitrate
  - copper(II) sulfate
  - sodium carbonate
  - calcium nitrite
  - potassium perchlorate
- Give the names for the following compounds:
  - $\text{Ag}_2\text{O}$
  - $\text{Ca}(\text{OH})_2$
  - $\text{KClO}_3$
  - $\text{NH}_4\text{OH}$
  - $\text{Fe}_2(\text{CrO}_4)_3$
  - $\text{KClO}$

### extension

Go to [go.hrw.com](http://go.hrw.com) for more practice problems that ask you to name ionic compounds.



Keyword: HC6FRMX

## Naming Binary Molecular Compounds

Unlike ionic compounds, molecular compounds are composed of individual covalently bonded units, or molecules. Chemists use two nomenclature systems to name binary molecules. The newer system is the Stock system for naming molecular compounds, which requires an understanding of oxidation numbers. This system will be discussed in Section 2.

The old system of naming molecular compounds is based on the use of prefixes. For example, the molecular compound  $\text{CCl}_4$  is named carbon *tetrachloride*. The prefix *tetra-* indicates that four chloride atoms are present in a single molecule of the compound. The two oxides of carbon,  $\text{CO}$  and  $\text{CO}_2$ , are named carbon *monoxide* and carbon *dioxide*, respectively.