

Use with textbook pages 84–92.

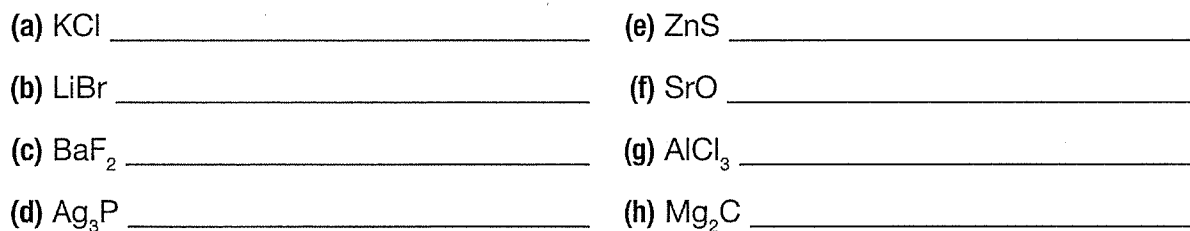
Writing names and formulas of ionic compounds

You can use the periodic table on page 202 to help you answer these questions.

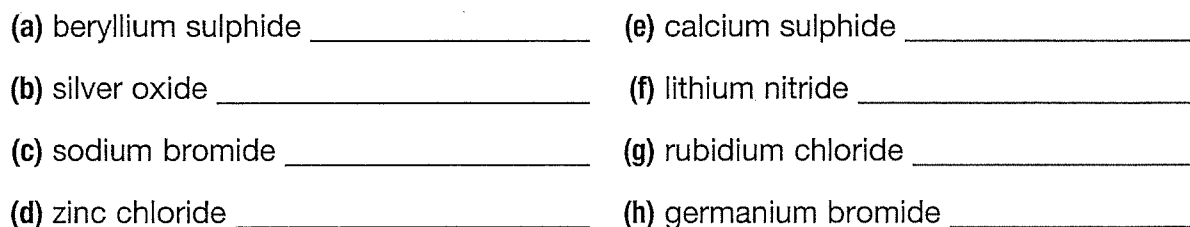
1. Complete the following table. First, identify each ion and its charge. Then, give the formula and name for each ionic compound formed. The table has been partially completed to help guide you.

	Chloride <u>Cl⁻</u>	Fluoride _____	Oxygen _____
sodium <u>Na⁺</u>	NaCl sodium chloride		
magnesium _____			
calcium _____			

2. Write the names of the following compounds.



3. Write the chemical formulas for the following compounds.



Use with textbook pages 84–92.

Compounds with a multivalent metal

You can use the periodic table on page 202 to help you answer these questions.

1. Write the formulas for the compounds formed from the following ions. Then name the compounds.

	Ions	Formula	Compound name
(a)	Mn^{3+} O^{2-}		
(b)	Pb^{3+} Br^-		
(c)	Pt^{2+} Cl^-		
(d)	Au^{3+} S^{2-}		
(e)	Pb^{4+} O^{2-}		
(f)	Sb^{3+} S^{2-}		
(g)	Fe^{2+} S^{2-}		
(h)	Co^{3+} O^{2-}		

2. Write the names of the following ionic compounds using Roman numerals.

(a) FeF_3 _____ (e) CoBr_2 _____

(b) CuCl_2 _____ (f) Au_2O _____

(c) SnO_2 _____ (g) CrP _____

(d) PtS_2 _____ (h) PbI_2 _____

3. Write the chemical formulas for the following compounds.

(a) iron(III) chloride _____ (e) gold(I) oxide _____

(b) copper(I) oxide _____ (f) chromium(II) fluoride _____

(c) tin(IV) sulphide _____ (g) manganese(II) iodide _____

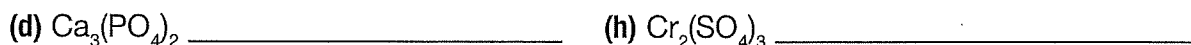
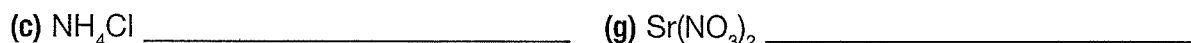
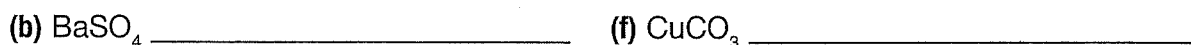
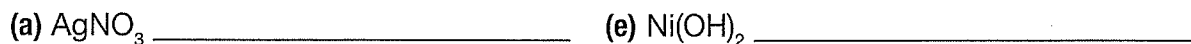
(d) bismuth(V) chloride _____ (h) iron(III) selenide _____

Use with textbook pages 84–92.

Compounds with polyatomic ions

You can use the periodic table on page 202 to help you answer these questions.

1. Write the names of the following ionic compounds.



2. Write the chemical formulas for the following compounds.



3. Write the formulas and names of the compounds with the following combination of ions. The table has been partially completed to help guide you.

	Positive ion	Negative ion	Formula	Compound name
(a)	Ca^{2+}	CO_3^{2-}	CaCO_3	calcium carbonate
(b)	K^+	SO_3^{2-}		
(c)			NaClO_3	
(d)				magnesium perchlorate
(e)	Cs^+	OH^-		
(f)				ammonium phosphate
(g)			Ca(CN)_2	
(h)	Fe^{3+}	HSO_4^-		

Use with textbook pages 84–92.

Names and formulas of ionic compounds

Match each Compound Name on the left with the correct Chemical Formula on the right. Each Chemical Formula may be used only once.	
Compound Name	Chemical Formula
1. _____ aluminum sulphide	A. Al_2S_3
2. _____ aluminum sulphate	B. $AlSO_4$
3. _____ ammonium sulphite	C. $Al_2(SO_3)_3$
	D. $Al_2(SO_4)_3$
	E. NH_4SO_3
	F. NH_4SO_4
	G. $(NH_4)_2SO_3$
	H. $(NH_4)_2SO_4$

Circle the letter of the best answer.

- How many chlorine atoms are in the compound calcium chlorate, $Ca(ClO_3)_2$?
 - 1
 - 2
 - 3
 - 6
- What is the ending of an ionic compound consisting of two elements (a metal and a non-metal)?
 - ate
 - ide
 - ine
 - ite

- In a chemical formula, what part shows the relative numbers of ions in the compound?
 - the coefficient in front of the element symbol
 - the subscript to the right of the element symbol
 - the superscript to the right of the element symbol
 - the positive or negative number to the right of the element symbol

Use the following diagrams to answer question 7.

26	3+	25	2+
Fe	2+	Mn	3+
Iron		Manganese	4+
55.8		54.9	

- What do iron and manganese have in common?

I.	they are multivalent metals
II.	they have more than one ion charge
III.	their most common ion charge is 2+

- I and II only
 - I and III only
 - II and III only
 - I, II, and III
- In the name “cobalt(II) phosphate,” what does the Roman numeral reveal about cobalt?
 - it has gained two electrons
 - it has an ion charge of 2–
 - it has an ion charge of 2+
 - it can form two positive ions
 - What is the name for the compound $CaCl_2$?
 - calcium chlorate
 - calcium chloride
 - calcium chlorine
 - calcium(II) chloride