Using the Stock System

The **stock system** is a set of rules for naming compounds of metals and non metals. The metal always comes first in the name and the formula. Monatomic metal ions, those consisting of only one type of atom, come in two varieties – univalent and polyvalent. For univalent metal ions, those having only one oxidation state, the name of the ion is exactly the same as that of the element that formed it. As a result, both Na and Na^{+} are called sodium. For polyvalent metal ions, those having multiple oxidation states, a roman numeral indicates the oxidation state. As a result, Fe^{+2} is called iron II, while Fe^{+3} is called iron III. Polyatomic metal ions, those consisting of more than one type of element such as NH_4^{+}, ammonium, are found on *Table E*.

The nonmetal always comes last in the name and in the formula. For monatomic nonmetal ions, delete the last part of the elements name and add "IDE". Thus the element sulfur (S) forms the ion sulfIDE (S^{-2}). Polyatomic nonmetal ions, such as SO_4^{-2} (sulfate) or OH^{-} (hydroxide) are found on *Table E*.

To write the name from the formula, it is necessary to first check the *Periodic Table* to see if the metal is polyvalent. If it is, you need to figure out the oxidation state of the metal by checking to see which one will make the sum of the oxidation states in the compound add up to zero. To write the formulas from the name, you need to look up the oxidation states of the ions, and apply the crossover rule.

Using the rules above, write the names for the compounds listed below on the left and the formulas for the compounds listed below on the right.

Writing Names		Writing Formulas	
1. $NaCl$	_____	11. iron III oxide	_____
2. $CuSO_4$	_____	12. chromium III carbonate	_____
3. $(NH_4)_2S$	_____	13. calcium sulfide	_____
4. BaO	_____	14. lead II arsenide	_____
5. LiF	_____	15. ammonium nitrate	_____
6. $Sn(NO_3)_4$	_____	16. potassium oxalate	_____
7. K_3N	_____	17. aluminum acetate	_____
8. $HgBr_2$	_____	18. cesium thiosulfate	_____
9. CaI_2	_____	19. strontium phosphide	_____
10. $Mg_3(PO_4)_2$	_____	20. tin IV oxide	_____