

## Nomenclature Worksheet #5

Writing Formulas for Ternary Compounds- Ternary compounds contain three or more elements. A metal combined with a polyatomic anion.

**Follow the same three steps you have used all along for ionic compounds.**

**Prerequisite: You MUST know the polyatomic ions from memory!**

1. Write elements symbols. First the metal, then nonmetal polyatomic ion.
2. Put the oxidation number/charge over top.
3. Add subscripts to make the overall charge equal zero. If there needs to be more than one of the polyatomic ion, use parentheses.

Examples: sodium nitrate  $\text{NaNO}_3$

barium nitrite  $\text{Ba}(\text{NO}_2)_2$

Representative (A groups) metals do not need a Roman numeral.

Iron (III) hydroxide  $\text{Fe}(\text{OH})_3$

The Roman numeral III tells us the charge of the iron is +3. The charge of the hydroxide ion is  $-1$ , so we will need three of them, as indicated by the subscript. In this case, parentheses are needed.

Transition metals need a Roman numeral to specify the oxidation state

Write the formulas of the following compounds:

1. lead (II) acetate  $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2$
2. calcium oxalate  $\text{CaC}_2\text{O}_4$
3. ammonium hydroxide  $\text{NH}_4\text{OH}$
4. iron (II) hydroxide  $\text{Fe}(\text{OH})_2$
5. sodium hydrogen sulfate  $\text{NaHSO}_4$
6. lead (II) hypochlorite  $\text{Pb}(\text{ClO})_2$
7. lithium sulfate  $\text{Li}_2\text{SO}_4$

8. copper (I) permanganate	$CuMnO_4$
9. zinc sulfite	$ZnSO_3$
10. manganese (II) nitrate	$Mn(NO_3)_2$
11. potassium cyanide	$KCN$
12. barium carbonate	$BaCO_3$
13. silver dichromate	$Ag_2Cr_2O_7$
14. strontium phosphate	$Sr_3(PO_4)_2$
15. aluminum sulfate	$Al_2(SO_4)_3$
16. copper (II) sulfite	$CuSO_3$
17. chromium (III) nitrite	$Cr(NO_2)_3$
18. lead (IV) carbonate	$Pb(CO_3)_2$
19. lead (II) chlorate	$Pb(ClO_3)_2$
20. tin (II) oxalate	$SnC_2O_4$
21. sodium peroxide	$Na_2O_2$
22. lithium hydrogen carbonate	$LiHCO_3$
23. manganese (II) perchlorate	$Mn(ClO_4)_2$
24. copper (I) phosphate	$Cu_3PO_4$
25. potassium dihydrogen phosphate	$KH_2PO_4$
26. cadmium (II) hydroxide	$Cd(OH)_2$
27. nickel (II) acetate	$Ni(C_2H_3O_2)_2$
28. silver chlorite	$AgClO_2$
29. zinc permanganate	$Zn(MnO_4)_2$
30. sodium nitrate	$NaNO_3$