

Ionic Compounds WKS II
Formula & Nomenclature Practice

NAME Answer Key
 Period _____ Date _____

Name to Formula (Put charges on ions first!!! Then make neutral.)	Formula to Name (Don't forget roman numerals for metals with more than one possible charge.)
1. tin(IV) chromate $\text{Sn}^{4+} \text{CrO}_4^{2-} \rightarrow \text{Sn}(\text{CrO}_4)_2$	11. PbO_2 $\text{Pb}^x \text{O}_2^{2-}$ $x + 2(2-) = 0; x=4+$ lead(IV) oxide
2. zinc carbonate $\text{Zn}^{2+} \text{CO}_3^{2-} \rightarrow \text{ZnCO}_3$	12. FeSO_4 $\text{Fe}^x \text{SO}_4^{2-}$ $x + 2- = 0; x=2+$ iron(II) sulfate
3. mercury (II) chloride $\text{Hg}^{2+} \text{Cl}^- \rightarrow \text{HgCl}_2$	13. $\text{Ni}(\text{NO}_2)_3$ $\text{Ni}^x (\text{NO}_2)_3^{1-}$ $x + 3(1-) = 0; x=3+$ nickel(III) nitrite
4. cobalt(II) sulfide $\text{Co}^{2+} \text{S}^{2-} \rightarrow \text{CoS}$	14. PdCO_3 $\text{Pd}^x \text{CO}_3^{2-}$ $x + 2- = 0; x=2+$ palladium(II) carbonate
5. iron (III) oxide $\text{Fe}^{3+} \text{O}^{2-} \rightarrow \text{Fe}_2\text{O}_3$	15. CuCl_2 $\text{Cu}^x \text{Cl}_2^{1-}$ $x + 2(1-) = 0; x=2+$ copper(II) chloride
6. vanadium(V) hydroxide $\text{V}^{5+} \text{OH}^- \rightarrow \text{V}(\text{OH})_5$	16. Mo_2S_3 $\text{Mo}_2^x \text{S}_3^{2-}$ $2x + 3(2-) = 0; x=3+$ molybdenum(III) sulfide
7. manganese (IV) carbonate $\text{Mn}^{4+} \text{CO}_3^{2-} \rightarrow \text{Mn}(\text{CO}_3)_2$	17. NbI_5 $\text{Nb}^x \text{I}_5^{1-}$ $x + 5(1-) = 0; x=5+$ niobium(V) iodide
8. copper (II) nitrate $\text{Cu}^{2+} \text{NO}_3^- \rightarrow \text{Cu}(\text{NO}_3)_2$	18. RuBr_3 $\text{Ru}^x \text{Br}_3^{1-}$ $x + 3(1-) = 0; x=3+$ ruthenium(III) bromide
9. chromium(VI) oxide $\text{Cr}^{6+} \text{O}^{2-} \rightarrow \text{CrO}_3$	19. $\text{Zn}(\text{OH})_2$ Zn only forms 2+ (Chart D) zinc hydroxide
10. iridium(IV) phosphate $\text{Ir}^{4+} \text{PO}_4^{3-} \rightarrow \text{Ir}_3(\text{PO}_4)_4$	20. AgNO_3 Ag only forms 1+ (Chart D) silver nitrate

21. What does the Roman numeral in the name of a cation indicate? How can it be determined from the formula?

It indicates the (positive) charge on the metal ion. It can be determined by balancing out the total negative charge from the anions.

22. When is it necessary to use a Roman numeral in the name of a cation? What cations do NOT need a Roman numeral?

It is needed to indicate the charge when a metal can have different charges. Cations with only one possible charge do not need a Roman numeral: Group 1, Group 2, Al^{3+} , Zn^{2+} , Cd^{2+} , and Ag^+ .