

## Formula Writing Review #8

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Write formulas for the following compounds

- 1) Lead (IV) carbonate \_\_\_\_\_
- 2) Zinc (II) chloride \_\_\_\_\_
- 3) Zinc (II) chlorate \_\_\_\_\_
- 4) Silver (I) perchlorate \_\_\_\_\_
- 5) Iron (III) hydroxide \_\_\_\_\_
- 6) Iron (II) sulfite \_\_\_\_\_
- 7) Gold (III) sulfate \_\_\_\_\_
- 8) Mercury (II) carbonate \_\_\_\_\_
- 9) Copper (I) chloride (trick) \_\_\_\_\_
- 10) Copper (II) phosphate \_\_\_\_\_

### **EXAMPLE: Lead (IV) phosphite is $\text{Pb}_3(\text{PO}_3)_4$**

We are given the chemical name “Lead (IV) phosphate”. We know that Lead is represented by the symbol Pb, according to the Periodic Table. The polyatomic ion table on page 178 of our text lists phosphite as  $\text{PO}_3^{-3}$ . As Lead is the positive ion, we write it first, and start our formula off as Pb  $\text{PO}_3$ . Lead can form either a  $\text{Pb}^{+2}$  ion or a  $\text{Pb}^{+4}$  ion, and to write our formula we must know which one we have. The Roman numeral IV tells us that this compound contains  $\text{Pb}^{+4}$ . Now we have to figure out how many of the +4 lead ions go with how many of the +3 phosphite ions to give a total charge of zero. If we have 3  $\text{Pb}^{+4}$  ions, there is a total positive charge of +12. If we have 4  $\text{PO}_3^{-3}$  ions, there is a total negative charge of -12. The +12 and -12 cancel out to give a total charge of zero. All compounds must have a total charge of zero! To write a formula with three Pb and four  $\text{PO}_3$  groups, we must write “ $\text{Pb}_3(\text{PO}_3)_4$ ” as our answer. Note the parentheses!