Name:_____

**Worksheet 6: Writing Formulas for Ionic Compounds with Complex Ions**

Use the periodic table and the complex ion chart to find the two ions (positive ion and negative ion) for each compound. Then write the formula.

Remember, the overall charge of the compound is neutral (zero charge). Thus, the overall positive charge must be equal to the overall negative charge.

*** If there is more than one complex ion needed, brackets must be placed around the complex ion.

Example: calcium phosphate

Ca^{2+} PO_4^{3-} (The calcium ion has a 2+ charge and the phosphate ion has a

3- charge. To have the positive and the negative be equal, 3 calcium ions are needed and 2 phosphate ions are needed. That will give 6 - 6 = 0 which is a zero charge.)

$Ca_3^{2+}(PO_4^{3-})_2$
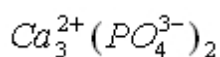
Therefore, $Ca_3(PO_4)_2$ is the answer.

| Ca^{2+} PO_4^{3-} |
| PO_4^{3-} |
| PO_4^{3-} Ca^{2+} |
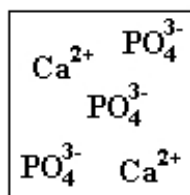
Count up the total charge.
2+, 2+, 2+, 3-, 3- = 6 - 6 =0
This adds up to zero!!

(Note that there are brackets around the phosphate ion since there are two of them.)

Name	Positive Ion	Negative Ion	Formula
1) sodium nitrate ex.	Na^+	NO_3^-	$NaNO_3$
2) potassium hydroxide			
3) calcium carbonate			
4) magnesium sulfate			
5) zinc chlorate			
6) sodium chromate			
7) strontium nitrate			
8) lithium carbonate			
9) potassium phosphate			
10) ammonium phosphate			
11) aluminum hydroxide			
12) calcium phosphate			
13) aluminum sulfate			
14) magnesium phosphate			
15) aluminum chromate			