Metals \_\_\_\_\_\_\_\_\_\_\_ electrons and become positive ions or \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Non-metals \_\_\_\_\_\_\_\_\_\_ electrons and become negative ions or \_\_\_\_\_\_\_\_\_\_\_\_\_.

lose, cations, gain, anions

Complete the following table to decide how each element could get the same configuration as the nearest noble gas. Hint: refer to the periodic table to check Atomic Numbers.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | Electron Configuration | Configuration of nearest noble gas | Change to element’s configuration | What would the charge of the atom be |
| Potassium | 2 8 8 1 | 2 8 8 | Lose one electron | + 1 |
| Magnesium |  | 2 8 |  |  |
| Boron |  | 2 |  |  |
| Fluorine |  |  |  |  |
| Phosphorous |  |  |  |  |
| Chlorine |  |  |  |  |
| Calcium |  |  |  |  |
| Sulfur |  |  |  |  |
| Carbon |  |  |  |  |

Bonding and Predicting Chemical Formulas

Al2O3

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ show the \_\_\_\_\_\_\_\_\_\_\_ of each atom in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

subscripts, ratio, compound

For an ionic bond, the \_\_\_\_\_\_\_\_ need to balance \_\_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_ of each ion changes to make the compound \_\_\_\_\_\_\_\_\_\_\_\_\_. The chemical \_\_\_\_\_\_\_\_\_\_\_ shows how many of each ion are needed to \_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_ and make the compound neutral.

Ions, charge, number, neutral, charge, formula, balance

Combine the following ions to give the correct formula

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | F- | Cl- | O2- | S2- | N3- |
| Na+ |  |  |  |  |  |
| Ag+ |  |  |  |  |  |
| K+ |  |  |  |  |  |
| Cu+ |  |  |  |  |  |
| Mg2+ |  |  |  |  |  |
| Ba2+ |  |  |  |  |  |
| Fe2+ |  |  |  |  |  |
| Cu2+ |  |  |  |  |  |
| Al3+ |  |  |  |  |  |
| Fe3+ |  |  |  |  |  |
| Sn4+ |  |  |  |  |  |
| Pb4+ |  |  |  |  |  |

Complete the following table to give the correct formula for each combination of ions:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | NO3- | OH- | CH3COO- | SO42- | CO32- | PO43- |
| Na+ |  |  |  |  |  |  |
| Cu+ |  |  |  |  |  |  |
| Cu2+ |  |  |  |  |  |  |
| Fe2+ |  |  |  |  |  |  |
| Fe3+ |  |  |  |  |  |  |
| Sn4+ |  |  |  |  |  |  |
| Zn2+ |  |  |  |  |  |  |
| Al3+ |  |  |  |  |  |  |
| NH4+ |  |  |  |  |  |  |