

Give the charge for the following ions: (Remember that the elements want to obtain a stable outer shell of electrons, meaning 8 in most cases except those of the 1st energy level which can only have a maximum of 2 in their outer shell. Also remember to look at what is the easiest way to achieve this, giving up electrons or gaining electrons. Whichever has a change of the fewest number of electrons is the way that element will most likely want to go.)

- a. Magnesium
- b. Neon
- c. Selenium
- d. Arsenic
- e. Gallium
- f. Strontium
- g. Cesium
- h. Barium
- i. Iodine

Write the electron dot diagrams for the following atoms. This is where you give the symbol for the element and then place the number of electrons in its outermost shell (the number of valence electrons) around the outside like in the following example for nitrogen which has 5 electrons in its outermost shell. (See pages 158-159 in your textbook)



- a. Polonium
- b. Xenon
- c. Bismuth

d. Tin

e. Radium

f. Thallium

g. Francium

Using the electron dot diagrams show how the following ionic compounds are formed by drawing arrows showing the movement of electrons. (See page 159 in your textbook)

1 Magnesium atom and 2 Fluorine atoms

3 Barium atoms and 2 Nitrogen atoms

2 Lithium atoms and 1 Sulfur atom

1 Calcium atom and 1 Oxygen atom

Give the name for the following ionic compounds. When naming these kinds of compounds called binary ionic compounds you ignore the subscript numbers and then give the name of the cation (first element in the compound) as the element's name without modifying it in any way followed by the name of the anion (see attached sheet with common anion names). For example: KF is called Potassium fluoride.

NaCl

BaO

CaF₂

Mg₃N₂

SrS

CsI

Rb₂O

Write the chemical formula for the following ionic compounds. Remember that the charges of the individual ions of each element in the compound must equal zero. If you need more than one of an element then use a subscript to indicate 2 or more atoms of that element. For example: Lithium Sulfide is written as Li₂S because Lithium has a +1 charge and sulfur has a -2 charge because you need 2 lithium to equal the -2 charge on the sulfur.

Potassium Oxide

Beryllium Bromide

Boron Chloride

Barium Fluoride

Magnesium Phosphide

Lithium Nitride

Cesium Selenide

Names of Common Anions (Elements from Groups 5A, 6A, and & 7A that have a negative charge)

N = nitride

P = phosphide

O = oxide

S = sulfide

F – fluoride

Cl = chloride

Br = bromide

I = iodide

Remember this

All the elements in Group 1A have a +1 charge

All the elements in Group 2A have a +2 charge

All the elements in Group 3A have a +3 charge

All the elements in Group 4A may have a +4 or a – 4 charge

All the elements in Group 5A have a -3 charge

All the elements in Group 6A have a -2 charge

All the elements in Group 7A have a – 1 charge

All the elements in Group 8A have no net charge – they are stable as they are