Mono-Atomic Ions & Ionic Compound Formation name: ANSWERS

When a metal atom loses one or more electrons it becomes a positive ion called a cation. When a nonmetal gains one or more electrons it becomes a negative ion called an anion. Atoms will lose or gain electrons to change their ground state electron configurations into noble gas configurations. When an ion forms, it is said to be **ISOELECTRIC** to a noble gas, meaning it now has a noble gas electron configuration.

For each metal atom show the ion it forms. For each cation, combine it with three different anions (one each from groups A, B, and C. Show the formula for the neutral ionic compound, and give the proper chemical name.

When naming ionic compounds we also name the cation first, using just the name of the metal atom. The anion comes second, and we always change the name of the nonmetal atom to —ide. Oxygen becomes oxide, nitrogen becomes nitride, and bromine becomes bromide (for examples).

On the second page, using the cations and anions provided:

PUT THE ION CHARGES IN, don't leave the atoms as atoms!

Determine the proper name for the neutral ionic compound that forms from these kinds of ions.

Write the proper chemical formula for these compounds, using the ion charges to determine the ratios of cations to anions.

Use the first three as examples.

1A	Li^{+1}	F^{-1}	lithium fluoride	LiF
1B	Na^{+1}	O^{-2}	sodium oxide	Na_2O
1C	K^{+1}	N^{-3}	potassium nitride	K_3N
2A	Rb^{+1}	Cl^{-1}	rubidium chloride	RbCl
2B	Cs^{+1}	S^{-2}	cesium sulfide	Cs_2S
2C	Fr^{+1}	P^{-3}	francium phosphide	Fr_3P
3A	Be^{+2}	Br^{-1}	beryllium bromide	$BeBr_2$
3B	Mg^{+2}	O^{-2}	magnesium oxide	MgO
3C	Ca^{+2}	N^{-3}	calcium nitride	Ca_3N_2
4A	Sr^{+2}	I^{-1}	strontium iodide	SrI_2
4B	Ba^{+2}	S^{-2}	barium sulfide	BaS
4C	Al^{+3}	P^{-3}	aluminum phosphide	AlS
5A	Li^{+1}	Br^{-1}	lithium bromide	LiBr
5B	Na^{+1}	O^{-2}	sodium oxide	Na_2O
5C	K^{+1}	P^{-3}	potassium phosphide	K_3P
6A	Rb^{+1}	I^{-1}	rubidium iodide	RbI
6B	Cs^{+1}	O^{-2}	cesium oxide	Cs_2O
6C	Fr^{+1}	P^{-3}	francium phosphide	Fr_3P
7A	Be^{+2}	Cl^{-1}	beryllium chloride	$BeCl_2$
7B	Mg^{+2}	S^{-2}	magnesium sulfide	MgS
7C	Ca^{+2}	P^{-3}	calcium phosphide	Ca_3P_2
8A	Sr^{+2}	S^{-2}	strontium sulfide	SrS
8B	Ba^{+2}	P^{-3}	barium phosphide	Ba_3P_2
8C	Al^{+3}	F^{-1}	aluminum fluoride	AlF_3
9A	Li^{+1}	O^{-2}	lithium oxide	Li_2O
9B	Na^{+1}	N^{-3}	sodium nitride	Na_3N
9C	K^{+1}	Cl^{-1}	potassium chloride	KCl
10A	Rb^{+1}	S^{-2}	rubidium sulfide	Rb_2S
10B	Cs^{+1}	P^{-3}	cesium phosphide	Cs_3P
10C	Fr^{+1}	Br^{-1}	francium bromide	FrBr
11A	Be^{+2}	O^{-2}	beryllium oxide	BeO
11B	Mg^{+2}	N^{-3}	magnesium nitride	Mg_3N_2
11C	Ca^{+2}	I^{-1}	calcium iodide	CaI_2
12A	Zn^{+2}	P^{-3}	zinc phosphide	Zn_3P_2
12B	Ag^{+1}	O^{-2}	silver oxide	Ag_2O
12C	Ga^{+1}	S^{-2}	gallium sulfide	GaS