Acad. p 1

Key

Name Esther Lee

Period _____

Write the formulas into the box for compounds containing the following ions

Ions	Na^{+}	Mg^{+2}	Al^{+3}	K^{+}	Ca^{+2}	B^{+3}	Rb^{+}
F^{-1}	NaF	MgF_2	AlF_3	KF	CaF_2	BF_3	RbF
O^{-2}	Na_2O	MgO	Al_2O_3	K_2O	CaO	B_2O_3	Rb_2O
N^{-3}	Na_3N	Mg_3N_2	AlN	K_3N	Ca_3N_2	BN	Rb_3N
Br^{-1}	NaBr	$MgBr_2$	$AlBr_3$	KBr	$CaBr_2$	BBr_2	RbBr
S^{-2}	Na_2S	MgS	Al_2S_3	K_2S	CaS	B_2S_3	Rb_2S
P^{-3}	Na_3P	Mg_3P_2	AlP	K_3P	Ca_3P_2	BP	Rb_3P
Cl^{-1}	NaCl	$MgCl_2$	$AlCl_3$	KCl	$CaCl_2$	BCl_3	RbCl
Se^{-2}	Na_2Se	MgSe	Al_2Se_3	K_2Se	CaSe	B_2Se_3	Rb_2Se

Name all the Magnesium compounds, use the ide ending for the NM:

1. Mgnesium fluoride
2. Magnesium oxide
3. Magnesium nitride
4. Magnesium bromide
5. magnesium sulfide
6. magnesium phosphide
7. magnesium chloride
8. magnesium selenide

Name all the Aluminum compounds, use the ide ending for the NM:

1. Aluminum fluoride
2. Aluminum oxide
3. aluminum nitride
4. aluminum bromide
5. aluminum sulfide
6. aluminum phosphide
7. aluminum chloride
8. aluminum selenide

Acad p. 2

Name: _____ Date: _____

IONIC vs COVALENT

When naming compounds it is important to first identify the compound as either ionic or covalent. This can be quite simple by following a few rules.

1. If there is a metal and a nonmetal in the formula – IONIC
2. If there is a polyatomic ion in the formula – IONIC
3. If only nonmetals are written in the formula – COVALENT

Key

Directions:
Put a check next to each compound indicating whether it is an IONIC or a COVALENT compound.

Compound	Ionic or Covalent?	Compound	Ionic or Covalent?	Compound	Ionic or Covalent?
CrF_3	ionic covalent	CuF_2	ionic covalent	NH_4Cl	ionic covalent
CO_2	ionic covalent	SO_3	ionic covalent	CO	ionic covalent
OH^{-1}	ionic covalent	KOH	ionic covalent	NaCl	ionic covalent
NCl_3	ionic covalent	CCl_4	ionic covalent	$AlPO_4$	ionic covalent
Cu_2S	ionic covalent	Cu_2O	ionic covalent	NH_4NO_3	ionic covalent
$MgSO_4$	ionic covalent	$SrSO_3$	ionic covalent	$KC_2H_3O_2$	ionic covalent
BF_3	ionic covalent	$AlCl_3$	ionic covalent	CCl_2	ionic covalent
Ca_3N_2	ionic covalent	Mg_3P_2	ionic covalent	NO	ionic covalent
SO_2	ionic covalent	CO	ionic covalent	NaCN	ionic covalent

2 ions polyatomic

$|3.98 - 2.04| = 1.94$

Polyvalent Ions have multiple oxidation numbers, i.e. can exist with more than one charge. Write the formulas using the criss cross method for compounds containing the following ions. When writing their names use roman numerals in parenthesis.
Ex. copper (I) chloride

Ions	Cu^{+1}	Cu^{+2}	Fe^{+2}	Fe^{+3}	Pb^{+2}	Pb^{+4}	Hg^{+2}
F^{-1}	CuF	CuF_2	FeF_2	FeF_3	PbF_2	PbF_4	HgF_2
O^{-2}	Cu_2O	CuO	FeO	Fe_2O_3	PbO	PbO_2	HgO
N^{-3}	Cu_3N	Cu_3N_2	Fe_3N_2	FeN	Pb_3N_2	Pb_3N_4	Hg_3N_2
Br^{-1}	$CuBr$	$CuBr_2$	$FeBr_2$	$FeBr_3$	$PbBr_2$	$PbBr_4$	$HgBr_2$
S^{-2}	Cu_2S	CuS	FeS	Fe_2S_3	PbS	PbS_2	HgS
P^{-3}	Cu_3P	Cu_3P_2	Fe_3P_2	FeP	Pb_3P_2	Pb_3P_4	Hg_3P_2
Cl^{-1}	$CuCl$	$CuCl_2$	$FeCl_2$	$FeCl_3$	$PbCl_2$	$PbCl_4$	$HgCl_2$
Se^{-2}	Cu_2Se	$CuSe$	$FeSe$	Fe_2Se_3	$PbSe$	$PbSe_2$	$HgSe$

Using Roman numerals and ide ending for the NM

Name the copper compounds:

CuF 1. copper(I) fluoride
2.
CuF_2 3. copper(II) fluoride
4.
Cu_2O 3. copper(I) oxide
CuO 5. copper(II) oxide

Name the iron compounds:

5. Iron (II) fluoride FeF_2
6. Iron (III) fluoride FeF_3
7. Iron (II) oxide FeO
8. Iron (III) oxide Fe_2O_3

Cu_3P copper(I) phosphide
Cu_3P_2 copper (II) phosphide

Iron(II) phosphide Fe_3P_2
Iron(III) phosphide FeP

Reduce subscripts to simplest ratio