

NAMING IONIC COMPOUNDS

Name _____

Circle the following compounds using the Stock Naming System.

- | | | | |
|----------|--|-------------------------------|--|
| PAI | 1. CaCO_3 | <u>calcium carbonate</u> | |
| | 2. KCl | <u>potassium chloride</u> | |
| PAI | 3. FeSO_4 | <u>iron (II) sulfate</u> | |
| | 4. LiBr | <u>lithium bromide</u> | |
| | 5. MgCl_2 | <u>magnesium chloride</u> | |
| | 6. FeCl_3 | <u>iron (III) chloride</u> | |
| PAI | 7. $\text{Zn}_3(\text{PO}_4)_2$ | <u>zinc phosphate</u> | |
| PAI x 2! | 8. NH_4NO_3 | <u>ammonium nitrate</u> | |
| PAI | 9. $\text{Al}(\text{OH})_3$ | <u>aluminum hydroxide</u> | |
| PAI | 10. $\text{CuC}_2\text{H}_3\text{O}_2$ | <u>copper (I) acetate</u> | |
| PAI | 11. PbSO_3 | <u>lead (II) sulfite</u> | |
| PAI | 12. NaClO_3 | <u>sodium chlorate</u> | |
| PAI | 13. CaC_2O_4 | <u>calcium oxalate</u> | * $\text{C}_2\text{O}_4^{-2} = \text{OXALATE}$ |
| | 14. Fe_2O_3 | <u>iron (III) oxide</u> | |
| PAI x 2! | 15. $(\text{NH}_4)_3\text{PO}_4$ | <u>ammonium phosphate</u> | |
| PAI | 16. NaHSO_4 | <u>sodium bisulfate</u> | |
| | *17. Hg_2Cl_2 | <u>mercury(I) chloride</u> | |
| PAI | 18. $\text{Mg}(\text{NO}_2)_2$ | <u>magnesium nitrite</u> | |
| PAI | 19. CuSO_4 | <u>copper (II) sulfate</u> | |
| PAI | 20. NaHCO_3 | <u>sodium bicarbonate</u> | |
| | 21. NiBr_3 | <u>nickel (III) bromide</u> | |
| PAI | 22. $\text{Be}(\text{NO}_3)_2$ | <u>beryllium nitrate</u> | |
| PAI | 23. ZnSO_4 | <u>zinc sulfate</u> | * zinc <u>always</u> takes a +2 charge |
| | 24. AuCl_3 | <u>gold (III) chloride</u> | |
| PAI | 25. KMnO_4 | <u>potassium permanganate</u> | |

COVALENT

NAMING MOLECULAR COMPOUNDS

Name _____

Name the following covalent compounds.

1. CO_2 carbon dioxide
2. CO carbon monoxide
3. SO_2 sulfur dioxide
4. SO_3 sulfur trioxide
5. N_2O dinitrogen monoxide
6. NO nitrogen monoxide
7. N_2O_3 dinitrogen trioxide
8. NO_2 nitrogen dioxide
9. N_2O_4 dinitrogen tetroxide
10. N_2O_5 dinitrogen pentoxide
11. PCl_3 phosphorus trichloride
12. PCl_5 phosphorus pentachloride
13. NH_3 nitrogen trihydride
14. SCl_6 sulfur hexachloride
15. P_2O_5 diphosphorus pentoxide
16. CCl_4 carbon tetrachloride
17. SiO_2 silicon dioxide
18. CS_2 carbon disulfide
19. OF_2 oxygen difluoride
20. PBr_3 phosphorus tribromide

Naming Ionic Compounds

Fill in the table below. A list of polyatomic ions is provided [here](#).

	Compound Name	<u>Cation</u>	<u>Anion</u>	Chemical Formula
	1 Calcium chloride	Ca^{2+}	Cl^{-1}	CaCl_2
PAI	2 Aluminum phosphate	Al^{3+}	PO_4^{-3}	AlPO_4
PAI	3 Aluminum Sodium phosphite	Na^+	PO_3^{3-}	Na_3PO_3
PAI	4 Potassium sulfate	K^+	SO_4^{2-}	K_2SO_4
PAI	5 Magnesium hydroxide	Mg^{2+}	OH^{-1}	$\text{Mg}(\text{OH})_2$
AI x2!	6 Ammonium nitrate	NH_4^{+1}	NO_3^{-1}	NH_4NO_3
PAI	7 Lithium sulfite	Li^{+1}	SO_3^{-2}	Li_2SO_3
PAI	8 Calcium hydroxide	Ca^{+2}	OH^{-1}	$\text{Ca}(\text{OH})_2$
	9 Hydrogen sulfide <u>just S</u>	H^+	S^{2-}	H_2S (hydrosulfuric acid)
PAI	10 Magnesium phosphate	Mg^{+2}	PO_4^{3-}	$\text{Mg}_3(\text{PO}_4)_2$
	11 Aluminum sulfide	Al^{+3}	S^{2-}	Al_2S_3
PAI	12 Aluminum sulfate	Al^{+3}	SO_4^{2-}	$\text{Al}_2(\text{SO}_4)_3$
PAI	13 Calcium phosphate	Ca^{+2}	PO_4^{3-}	$\text{Ca}_3(\text{PO}_4)_2$
	14 barium oxide	Ba^{+2}	O^{2-}	BaO
PAI x2!	15 ammonium carbonate	NH_4^{+1}	CO_3^{2-}	$(\text{NH}_4)_2\text{CO}_3$
AI x2!	16 ammonium sulfate	NH_4^{+1}	SO_4^{2-}	$(\text{NH}_4)_2\text{SO}_4$
PAI	17 barium nitrate	Ba^{+2}	NO_3^{-1}	$\text{Ba}(\text{NO}_3)_2$
PAI	18 sodium bicarbonate	Na^+	HCO_3^-	NaHCO_3
PAI	19 potassium chlorate	K^+	ClO_3^-	KClO_3
	20 zinc sulfide	Zn^{2+}	S^{2-}	ZnS

TYPES OF CHEMICAL BONDS

Name _____

Classify the following compounds as ionic (metal + nonmetal), covalent (nonmetal + nonmetal) or both (compound containing a polyatomic ion).

1. CaCl_2 I

11. MgO I

2. CO_2 C

12. NH_4Cl C/I (PAI)

3. H_2O C

13. HCl C/I* (ACID!)
H IN FRONT MEANS
H IS ACTING AS A
METAL

4. BaSO_4 C/I (PAI)

14. KI I

5. K_2O I

15. NaOH C/I (PAI)

6. NaF I

16. NO_2 C

7. Na_2CO_3 C/I (PAI)

17. AlPO_4 C/I (PAI)

8. CH_4 C

18. FeCl_3 I

9. SO_3 C

19. P_2O_5 C

0. LiBr I

20. NO C