

Unit 4 Review*Honors*

1. What are the different properties for metals, nonmetals and metalloids?

Metals	Non-metals	Metalloids

2. Write the formula for the following
- simple*
- ionic compounds.

a. calcium sulfide	_____	b. aluminum sulfide	_____
c. calcium fluoride	_____	d. boron chloride	_____
e. sodium fluoride	_____	f. boron nitride	_____

3. Name the following
- simple*
- ionic compounds.

a. K_2S	_____	b. Ba_3P_2	_____
c. $NaCl$	_____	d. $CaCl_2$	_____
e. MgS	_____	f. Cs_2Se	_____

4. Write the formula for the following
- multivalent*
- ionic compounds.

a. Cobalt (II) phosphide	_____	b. Copper (II) Phosphide	_____
c. Nickel (I) Oxide	_____	d. Iron (III) Phosphide	_____
e. Iron (II) nitride	_____	f. Manganese (IV) Sulfide	_____

5. Name the following
- multivalent*
- ionic compounds.

a. Cu_2S	_____	b. Cu_3P	_____
c. Cu_3P_2	_____	d. MoS	_____
e. ZrS_2	_____	f. TiP	_____

6. Write the formula for the following
- polyatomic*
- ionic compounds.

a. barium carbonate	_____	b. barium permanganate	_____
c. barium hydroxide	_____	d. barium phosphate	_____
e. barium borate	_____	f. sodium hydroxide	_____

Name: _____ Per _____

7. Name the following *polyatomic* ionic compounds.

- | | |
|------------------------------------|---|
| a. $\text{Ca}(\text{OH})_2$ _____ | b. CaCO_3 _____ |
| c. Ca_3PO_4 _____ | d. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ _____ |
| e. NH_4ClO_3 _____ | f. CuOCN _____ |

8. Write the formula for the following *ACIDS*.

- | | |
|-----------------------------|----------------------------|
| a. sulfuric acid _____ | b. perchloric acid _____ |
| c. dichromic acid _____ | d. hypochlorous acid _____ |
| e. hydrosulfuric acid _____ | f. hydrobromic acid _____ |

9. Name the following *ACIDS*.

- | | |
|--------------------------|-----------------------------------|
| a. HI _____ | b. H_2CrO_4 _____ |
| c. HClO_3 _____ | d. HClO _____ |
| e. HMnO_4 _____ | f. H_2S _____ |

10. The table below has a mixture of correct and incorrect formulas and names. First decide if the compound name and formula are correct. If it is correct then you do not need to rewrite the correct name and formula. If it is incorrect then write the correct formula and correct name.

Compound Formula/Name	Right or Wrong?	Correct Name	Correct Formula
Al_3S_2 Aluminum Sulfide			
Sr_2S_2 Strontium Sulfide			
KBr Potassium Bromide			
Li_2O dilithium oxide			
BaCl Barium Chloride			
NO mononitrogen monoxide			
Ca_3P_2 tricalcium diphosphide			

Name: _____ Per _____

11. Draw the Lewis Structures for each of the following *covalent and ionic compounds*. Be sure to correctly show how electrons are distributed.

Compound	Lewis Diagram	How are electrons distributed?
NCl_3		
MgCl_2		
SeH_2		
Ba_3N_2		

12. Determine what is incorrect with each of the following Lewis Structures. Then draw the correct Lewis Structure.

Compound	Incorrect Lewis Structure	What is Incorrect	Correct Lewis Structure
HCN			
SO_3			
NaCl			
BaS			

Name: _____ Per _____

13. Complete the following table (mixed nomenclature).

*

Ionic, Covalent Or acid?	Name of this compound	Formula for this compound
		Fe ₂ S ₃
		MgCl ₂
	Aluminum Chloride	
	Strontium Nitride	
	Cadmium Chloride	
		ZnF ₂
		HCl
	Hydrobromic acid	
		H ₂ SO ₄
	Sulfurous acid	
		NH ₄ Cl
	Ammonium sulfide	
		Na ₂ SO ₄
	Rubidium fluoride	
		Ga ₂ S ₃
	Sodium nitrate	
	Iron (III) carbonate	
	Chlorous acid	
	Barium hydroxide	
		Cu ₂ O
		NaCN
	Beryllium cyanide	
		H ₃ PO ₄