

Name \_\_\_\_\_ Date \_\_\_\_\_ Per \_\_\_\_\_

**WORKSHEET: Chemical Bonding – Ionic & Covalent!****REMEMBER...****Ionic Bond**

between a Metal and Non-Metal

(M + NM)

**Covalent Bond**

between a Non-Metal and Non-Metal

(NM + NM)

**PART 1:** Determine if the elements in the following compounds are metals or non-metals. Describe the type of bonding that occurs in the compound.

Compound	Element 1 (metal or non-metal?)	Element 2 (metal or non-metal?)	Bond Type
NO <sub>2</sub>	N = non-metal	O = non-metal	covalent
NaCl			
SO <sub>2</sub>			
PI <sub>3</sub>			
MgBr <sub>2</sub>			
CaO			
H <sub>2</sub> O			
K <sub>2</sub> O			
AlF <sub>3</sub>			
O <sub>2</sub>			
CuCl <sub>2</sub>			
NO <sub>2</sub>			
CO <sub>2</sub>			
HF			
Rb <sub>2</sub> S			
NBr <sub>3</sub>			
Fe <sub>2</sub> O <sub>3</sub>			
CCl <sub>4</sub>			

**PART 2:** Use Lewis dot structures to show the ionic bonding in the following pairs of elements. Show the transfer of electrons using arrows. Write the correct chemical formula for the ionic compound that forms.

1) barium oxide (Ba and O)

Formula: \_\_\_\_\_

2) calcium chloride (Ca and Cl)

Formula: \_\_\_\_\_

3) aluminum oxide (Al and O)

Formula: \_\_\_\_\_

4) sodium oxide (Na and O)

Formula: \_\_\_\_\_

5) sodium nitride (Na and N)

Formula: \_\_\_\_\_

6) magnesium phosphide (Mg and P)

Formula: \_\_\_\_\_

**PART 3:** Use Lewis dot structures to show the covalent bonding in the following pairs of elements. Once you have determined the structure for the molecule, write its structural formula in the space provided; use a dash to represent a shared pair of electrons, and dots to show unshared electrons.

1) nitrogen triiodide (NI<sub>3</sub>)

Show work here...HINT: nitrogen is in the middle!

Final Answer:

2) carbon tetrabromide (CBr<sub>4</sub>)

Show work here...HINT: carbon is in the middle!

3) dihydrogen monoxide (H<sub>2</sub>O)

Show work here...HINT: oxygen is in the middle!