**Lewis Dot Practice**

Use electronegativity to predict the type of bond that will occur between the following elements and use Lewis Dot structures (including charges) to show how they will bond together. Write the resulting formula below your diagram.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Elements</th>
<th>Lewis Dot Structures</th>
<th>ΔEN</th>
<th>Element w/ greater pull on e-</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Potassium and Fluorine</td>
<td><img src="image" alt="Lewis Dot for K-F" /></td>
<td>4.0 - 0.8 = 3.2</td>
<td>F</td>
<td>$\text{KF}$</td>
</tr>
<tr>
<td>2)</td>
<td>Calcium and Bromine</td>
<td><img src="image" alt="Lewis Dot for Ca-Br" /></td>
<td>2.8 - 1.0 = 1.8</td>
<td>Br</td>
<td>$\text{CaBr}_2$</td>
</tr>
<tr>
<td>3)</td>
<td>Gallium and Oxygen</td>
<td><img src="image" alt="Lewis Dot for Ga-O" /></td>
<td>3.5 - 1.6 = 1.9</td>
<td>O</td>
<td>$\text{Ga}_2\text{O}_3$</td>
</tr>
<tr>
<td>4)</td>
<td>Iodine and Lithium</td>
<td><img src="image" alt="Lewis Dot for I-Li" /></td>
<td>3.5 - 1.0 = 2.5</td>
<td>I</td>
<td>$\text{LiI}$</td>
</tr>
<tr>
<td>5)</td>
<td>Oxygen and Barium</td>
<td><img src="image" alt="Lewis Dot for O-Ba" /></td>
<td>3.5 - 0.9 = 2.6</td>
<td>O</td>
<td>$\text{BaO}$</td>
</tr>
<tr>
<td>6)</td>
<td>Magnesium and Nitrogen</td>
<td><img src="image" alt="Lewis Dot for Mg-N" /></td>
<td>3.0 - 1.2 = 1.8</td>
<td>N</td>
<td>$\text{Mg}_3\text{N}_2$</td>
</tr>
</tbody>
</table>

7) Other than calculating ΔEN, what is another way you can predict the type of bond that will occur between 2 atoms?

* Ionic = Metal + Non-Metal
* Covalent = Non-Metal + Non-Metal
Use your knowledge of ionic charges to predict the formulas for compounds made from the following ions/polyatomic ions.

Predict Charges → Criss-Cross Charges → Write Formula

1) Calcium and Phosphorous

$$\text{Ca}^{2+} \quad \text{P}^{3-}$$

$$\text{Ca}_3\text{P}_2$$

2) Magnesium and Nitrogen

$$\text{Mg}^{2+} \quad \text{N}^{3-}$$

$$\text{Mg}_3\text{N}_2$$

3) Oxygen and Sodium

$$\text{Na}^{+} \quad \text{O}^{2-}$$

$$\text{Na}_2\text{O}$$

4) Ammonium and Sulfur

$$\text{NH}_4^+ \quad S^{2-}$$

$$(\text{NH}_4)_2\text{S}$$

5) Aluminum and Hydroxide

$$\text{Al}^{3+} \quad \text{OH}^-$$

$$\text{Al} (\text{OH})_3$$

6) Iron (II) and Sulfate

$$\text{Fe}^{2+} \quad \text{SO}_4^{2-}$$

$$\text{FeSO}_4 \quad \text{(reduce)}$$

7) Copper (I) and Phosphate

$$\text{Cu}^{+} \quad \text{PO}_4^{3-}$$

$$\text{Cu}_3\text{PO}_4$$

8) Vanadium (III) and Acetate

$$\text{V}^{3+} \quad \text{C}_2\text{H}_3\text{O}_2^-$$

$$\text{V} (\text{C}_2\text{H}_3\text{O}_2)_3$$