

Name _____ **KEY** _____ Date _____ Period _____

Periodic Trends

Atomic Radius

1. What is the periodic trend for atomic radius? Use boron and nitrogen to explain why the trend is that way.
 - **Atomic radius increases down the table and to the left. Nitrogen has a smaller radius because it fills in the same energy level as Boron, but has a stronger nucleus, which pulls the electrons inwards.**
2. For each pair, circle the element with the largest atomic radius:
 - a. **K** or Li
 - b. **Mg** or Cl
 - c. O or **Se**
 - d. F or **Cs**
 - e. **Re** or Ru
 - f. Ne or **Rh**

Ionization Energy

3. What is the periodic trend for ionization energy? Use sodium and fluorine to explain why the trend is that way.
 - **Ionization energy increases up the table and to the right. Fluorine is a smaller atom with the electrons closer to the nucleus than sodium. Because the nucleus has a greater force on smaller atoms, fluorine has the higher IE.**
4. For each pair, circle the element with the largest ionization energy:
 - a. **Be** or Li
 - b. Si or **C**
 - c. As or **S**
 - d. **He** or Fr
 - e. **I** or In
 - f. Ba or **Tc**

Electronegativity

5. What is the periodic trend for electronegativity? Use chlorine and magnesium to explain why the trend is that way.
 - **Electronegativity increases up the table and to the right. Chlorine is a smaller atom, so the bonded electrons will be pulled closer to its nucleus than to magnesium's.**
6. Why are the noble gases not considered for electronegativity?
 - **Noble gases don't bond with other atoms, so they do not show electronegativity.**