**Chemical bonding trends review wksht Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Write a sentence that summarizes how the following values change as you go a) across a period, b) down a group/family.

**First ionization energy**

**Electronegativity**

**Electron Affinity**

**Atomic Size (radius)**

**Ionic Size (radius)**

Compare the following elements to one another and comment on which has the larger a) ionization energy, b) electronegativity, AND c) atomic size.

**Na, Si**

**Ca, Ba**

**Cr, Zn**

Define the physical properties AND the movement of electrons involved in a chemical bond between:

**Ionic Compounds (Formula Units):**

**Covalent Compounds (Molecules):**

Using your electronegativity table as a reference, what type of bond would you predict between:

1. **Ca, Se b) Al, S c) C, I d) Pb, Br**

**Draw and label the following on a simple binary compound: bond axis, ionic radius, internuclear distance, Van der Waals radius.**

Which would you predict to have a larger radius?

1. **Na, Na ion**
2. **K, K ion**
3. **Cl, Cl ion**
4. **Mg, Si**
5. **Ba, Cl**
6. **Ca, I**

As electron affinity increases, what would you expect the following to do? Comment on both across the period and group.

1. **Atomic size**
2. **Ionization energy**
3. **Electronegativity**
4. **Tendency to gain electrons**
5. **Tendency to lose electrons**

How do you calculate the bond length between ionic compounds versus covalent?