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.

1) **First ionization energy**

2) **Electronegativity**

3) **Electron Affinity**

4) **Atomic Size (radius)**

5) **Ionic Size (radius)**

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

a) **Na, Si**

b) **Ca, Ba**

c) **Cr, Zn**

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

a) **Ionic Compounds (Formula Units):**

b) **Covalent Compounds (Molecules):**

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

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

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

10) Which would you predict to have a larger radius?

A) **Na, Na ion**
B) **K, K ion**
C) **Cl, Cl ion**
D) **Mg, Si**
E) **Al, B**
F) **Ba, Cl**

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

a) **Atomic size**
b) **Ionization energy**
c) **Electronegativity**
d) **Tendency to gain electrons**
e) **Tendency to lose electrons**

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