**Chemistry Unit 3 Atoms and the Periodic Table Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Periodic Trends Worksheet**

1 . Rank the following elements by increasing atomic radius: carbon, aluminum, oxygen, potassium.

1. Rank the following elements by increasing electronegativity: sulfur, oxygen, neon, aluminum.
2. Why does fluorine have a higher ionization energy than iodine?
3. Why do elements in the same family generally have similar properties?
4. Indicate whether the following properties increase or decrease from left to right across the periodic table.
   1. atomic radius (excluding noble gases)
   2. first ionization energy
   3. electronegativity
5. What trend in atomic radius occurs down a group on the periodic table? What causes this trend?
6. What trend in ionization energy occurs across a period on the periodic table? What causes this trend?
7. Circle the atom in each pair that has the largest atomic radius. Justify your choice.

# a. Al or B b Na or Al c. S or O

# d. O or F e. Br or Cl f. Mg or Ca

9. Circle the atom in each pair that has the greater ionization energy Justify your choice.

a. Li or Be b. Ca or Ba c. Na or K

d. P or Ar e. Cl or Si f. Li or K

10. Circle the atom in each pair that has the greater electronegativity. Justify your choice

## a. Ca or Ga b. Br or As c. Li or O

## d. Ba or Sr e. Cl or S f. O or S

11. Circle the larger ion or atom. Justify your choice.

## a. Ca or Ca+2 b. Br or Br - c. Na+ or Mg+2

## d. Ba+2 or Sr+2 e. Cl- or Ca+2 f. O-2 or S-2