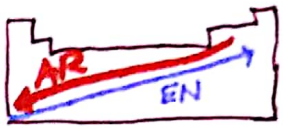
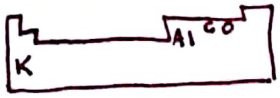
Name _____ Date _____

Periodic Trends Worksheet



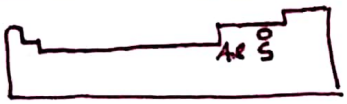
Directions: Use your notes to answer the following questions.

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



O, C, Al, K

2. Rank the following elements by increasing electronegativity: sulfur, oxygen, ~~neon~~ O cause a noble gas, aluminum.



Al, S, O

3. Why does fluorine have a higher ionization energy than iodine?

It is a smaller atom and the electrons are closer to the nucleus which increases the attraction between protons and ~~ele~~ electrons

4. Why do elements in the same family generally have similar properties?

same # of valence electrons

5. Indicate whether the following properties increase or decrease from left to right across the periodic table.
   a. atomic radius (excluding noble gases) ~~incr~~ decrease
   b. first ionization energy increase
   c. electronegativity increase

6. What trend in atomic radius occurs down a group on the periodic table? What causes this trend? radius increases → addition of energy levels

7. What trend in ionization energy occurs across a period on the periodic table? What causes this trend? → I.E. increases → smaller size makes electrons closer to nucleus and harder to take away

8. Circle the atom in each pair that has the largest atomic radius.
   a. (Al) or B same group
   b. (Na) or Al same period
   c. (S) or O same group
   d. (O) or F same period
   e. (Br) or Cl same group
   f. Mg or (Ca) same group

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9. Circle the atom in each pair that has the greater ionization energy. = smaller atom
   a. Li or (Be) same period
   b. (Ca) or Ba same group
   c. (Na) or K same group
   d. P or (Ar) same period
   e. (Cl) or Si same period
   f. (Li) or K same group

10. Define electronegativity.

    the pull an atom has on its outer (valence) electrons

11. Circle the atom in each pair that has the greater electronegativity. smaller atom
    a. Ca or (Ga) same period
    b. (B) or As same period
    c. Li or (O) same period
    d. Ba or (Sr) same group
    e. (Cl) or S same period
    f. (O) or S same group