Honors Chemistry - Periodic Trends Worksheet Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Circle the element with the largest atomic radius and put a square around the element with the smallest atomic radius:

Cu K Ni Br

* 1. Explain why you made these choices:

1. Circle the element with the highest ionization energy and put a square around the element with the lowest ionization energy:

Cu K Ni Br

* 1. Explain why you made these choices:

1. Circle the element with the highest electronegativity and put a square around the element with the lowest electronegativity:

Cu K Ni Br

* 1. Explain why you made these choices:

1. For each of the following groups: Circle the element with the largest atomic radius and put a square around the element with the smallest atomic radius:
   1. O C Be Ne
   2. Na Rb Fr H
   3. Pb C Sn Si
   4. Au W S Fr Ne Zn
2. For each of the following groups: Circle the element with the highest ionization energy and put a square around the element with the lowest ionization energy:
   1. O C Be Ne
   2. Na Rb Fr H
   3. Pb C Sn Si
   4. Au W S Fr Ne Zn
3. For each of the following groups: Circle the element with the highest electronegativity and put a square around the element with the lowest electronegativity:
   1. O C Be Ne
   2. Na Rb Fr H
   3. Pb C Sn Si
   4. Au W S Fr Ne Zn
4. Circle the ions that will have a radius larger than the radius of their neutral parent atom and put a square around the ions that will have a radius smaller than the radius of their neutral parent atom:

Na+ Sr2+ P3- Cr3+ O2- C4- C4+ Ag+ Br-

* 1. Explain why you made these choices:

1. For each of the following groups, circle the ion with the largest ionic radius:  
   1. Cu+ Cu2+
   2. Cr3+ Cr2+ Cr6+ Cr4+
   3. O2- O-
2. Rank the following elements in order of increasing atomic radius:

Carbon, Aluminum, Oxygen, Potassium

1. Rank the following elements in order of increasing electronegativity:

Sulfur, Oxygen, Fluorine, Aluminum

1. Rank the following elements in order of decreasing ionization energy:

Lithium, Calcium, Barium, Nitrogen

1. What is the difference between ionization energy and electronegativity?