Periodic Trends Worksheet

Use the periodic table and your knowledge of periodic trends to answer the following questions.

1. Which atom in each pair has the larger atomic radius?
   a) Li or K b) Ca or Ni c) Ga or B d) O or C e) Cl or Br
   f) Be or Ba g) Si or S h) Fe or Au

2. What is the periodic trend for atomic size from top to bottom in a group? from left to right in a period?

3. Why do atoms get smaller as you move left to right in a period?

4. Which element in each pair has a larger ionization energy?
   a) Na or O b) Be or Ba c) Ar or F d) Cu or Ra e) I or Ne
   f) K or V g) Ca or Fr h) W or Se

5. Explain the relationship between the relative size of an ion to its neutral atom and the charge on the ions.

6. Which particle has the larger radius in each atom/ion pair?
   a) Na, Na^{+} b) S, S^{2-} c) I, I^{-} d) Al, Al^{3+}

7. What is ionization energy? What is first ionization energy?

8. What is the periodic trend for first ionization energy?

9. Arrange the following groups of elements in order of increasing ionization energy.
   a) Be, Mg, Sr b) Bi, Cs, Ba c) Na, Al, S

10. Which element in each pair has a higher electronegativity value?
    a) Cl, F b) C, N c) Mg, Ne d) As, Ca

11. What is the periodic trend for electronegativity?