

### Chemistry – Chapters 6-8 Book problems #1: Periodic trends

1. How does atomic size change within groups and across periods? (2 separate questions)
2. When do ions form?
3. How do first ionization energies vary within groups and across periods? (2 separate questions)
4. Compare the size of ions to the size of the atoms from which they form. (2 separate questions, since there are cations and anions – answers differ based on which type of ion is formed).
5. How do electronegativity values vary within groups and across periods? (2 separate questions)
6. In general, how can the periodic trends displayed by elements be explained? In other words, comment on how one uses the periodic table to visually explain the different trends discussed in this chapter.
7. Arrange the following elements in order of **decreasing atomic size**: sulfur, chlorine, aluminum, and sodium. Does your arrangement demonstrate a periodic trend or a group trend?
8. Which element in each pair has the larger first ionization energy?
  - A. sodium, potassium
  - B. magnesium, phosphorous