

Practice - Periodic Trends

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

- Circle the atom in each pair that has the larger atomic radius.
 - Li or K
 - Ga or B
 - Cl or Br
 - Be or Ba
 - Ca or Ni
 - O or C
 - Fe or Ru
 - Si or S
- Circle the ion in each pair that has the smaller ionic radius.
 - K^+ or O^{2-}
 - Ba^{2+} or I^-
 - Al^{3+} or P^{3-}
 - S^{2-} or S^{3-}
 - K^+ or Cs^+
 - Fe^{2+} or Fe^{3+}
 - F^- or S^{2-}
 - Cl^- or Br^-
- Circle the element in each pair that has the larger ionization energy.
 - Na or O
 - Be or Ba
 - Cu or Ra
 - I or Ne
 - K or V
 - Ca or Fr
 - W or Se
- Circle the element in each pair that has the smaller electronegativity.
 - Na or O
 - S or F
 - At or Br
 - C or Si
 - N or Al
 - Cs or At
 - Fr or Rn
- Circle the element in each pair that has the greater electron affinity.
 - Na or O
 - S or F
 - At or Br
 - C or Si
 - N or Al
 - Cs or At
 - Fr or Rn

Summary Arrow of Trend

Summary Arrow of Trend

Summary Arrow of Trend

Summary Arrow of Trend

Summary Arrow of Trend

6. What does an atom's atomic radius basically tell us about that atom?

7. Why do the atomic radii of the elements decrease as you move left to right across a period?

8. Why do the atomic radii of the elements increase as you move down a group?

9. What does "inner level electron shielding" mean?

10. In general, what happens to an atom's radius when it becomes a + ion? A - ion?

11. Why do the + ionic radii decrease as you move left to right across a period?

12. Why do the - ionic radii increase as you move right to left across a period?

13. Define "ionization energy".

14. Explain in detail how ionization energy and electron affinity are related.

15. Why do the ionization energies of the elements increase as you move left to right across a period?

16. Why do ionization energies of the elements decrease as you move down a group?

17. Why is there such a large jump in ionization energy between the second and third ionization energies for magnesium?

18. Define the term electronegativity.

19. Which group has no electronegativity values? Why is this so?

20. What are the period and group trends for electronegativity?

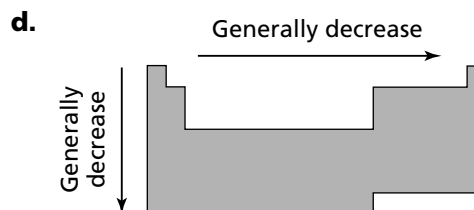
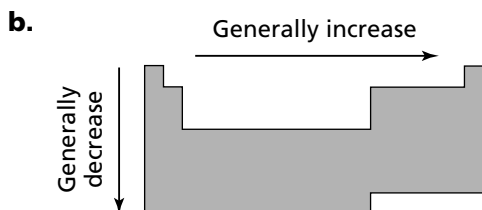
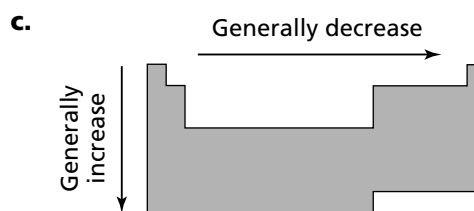
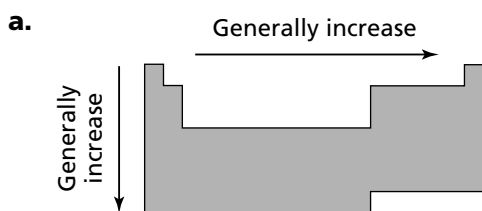
Section 6.3 Periodic Trends

In your textbook, read about atomic radius and ionic radius.

Circle the letter of the choice that best completes the statement or answers the question.

1. Atomic radii cannot be measured directly because the electron cloud surrounding the nucleus does not have a clearly defined
- a. charge. b. mass. c. outer edge. d. probability.

2. Which diagram best represents the group and period trends in atomic radii in the periodic table?



3. The general trend in the radius of an atom moving down a group is partially accounted for by the
- a. decrease in the mass of the nucleus. c. increase in the charge of the nucleus.
 b. fewer number of filled orbitals. d. shielding of the outer electrons by inner electrons.

4. A(n) _____ is an atom, or bonded group of atoms, that has a positive or negative charge.
- a. halogen b. ion c. isotope d. molecule

5. An atom becomes negatively charged by
- a. gaining an electron. b. gaining a proton. c. losing an electron. d. losing a neutron.

6. Which diagram best represents the relationship between the diameter of a sodium atom and the diameter of a positive sodium ion?

