

6-3 Review and Reinforcement

Periodic Trends

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

Which atom in each pair has the larger atomic radius?

_____ 1. Li or K

_____ 2. Ca or Ni

_____ 3. Ga or B

_____ 4. O or C

_____ 5. Cl or Br

_____ 6. Be or Ba

_____ 7. Si or S

_____ 8. Fe or Au

Which ion in each pair has the smaller atomic radius?

_____ 9. K^+ or O^{2-}

_____ 10. Ba^{2+} or I^-

_____ 11. Al^{3+} or P^{3-}

_____ 12. K^+ or Cs^+

_____ 13. Fe^{2+} or Fe^{3+}

_____ 14. F^- or S^{2-}

Which atom or ion in each pair has the larger ionization energy?

_____ 15. Na or O

_____ 16. Be or Ba

_____ 17. Ar or F

_____ 18. Cu or Ra

_____ 19. I or Ne

_____ 20. K or V

_____ 21. Ca or Fr

_____ 22. W or Se

Write the charge that each of the following atoms will acquire when it has a complete set of valence electrons

_____ 23. O

_____ 24. Na

_____ 25. F

_____ 26. N

_____ 27. Ca

_____ 28. Ar

29. Define atomic radius

30. Why do atoms get smaller as you move across a period?

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

32. Contrast ionization energy and electron affinity. In general, what can you say about these values for metals and nonmetals?

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

34. Explain why noble gases are inert and do not form ions.

35. Define the term electronegativity. What is the periodic trend for electronegativity?