

5.4

THE PERIODIC TABLE: ORGANIZING THE ELEMENTS

SECTION REVIEW

Objectives

- Describe the origin of the periodic table
- Identify the position of groups, periods, and the transition metals in the periodic table

Key Terms

- | | | |
|---------------------------|---------------------------|---------------|
| • periodic table | • metals | • nonmetals |
| • periods | • alkali metals | • halogens |
| • periodic law | • alkaline earth metals | • noble gases |
| • group | • transition metals | • metalloids |
| • representative elements | • inner transition metals | |

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

The periodic table organizes the elements into vertical 1 1. _____
 and horizontal 2 in order of increasing 3. The table is 2. _____
 constructed so that elements that have similar chemical properties 3. _____
 are in the same 4. The elements in Groups 1A through 7A are 4. _____
 called the 5. The 6 make up Group 0. The elements in 5. _____
 Groups 2A and 3A are interrupted in periods 4 and 5 by the 7 6. _____
 and in the periods 6 and 7 by the 8. The Group 1A elements 7. _____
 are called the 9, and the Group 2A elements are called the 8. _____
10. The nonmetals of 11 are called the halogens. 9. _____
 Elements with properties that are intermediate between those of 10. _____
 metals and nonmetals are called 12. 11. _____
 12. _____

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- _____ 13. In his periodic table, Mendeleev arranged the elements in ascending order of atomic number.
- _____ 14. The representative elements are the Group A elements.
- _____ 15. The transition metals and inner transition metals are the Group B elements.
- _____ 16. The element in Group 4A, period 3, is gallium.

Part C Matching

Match each description in Column B to the correct term in Column A

Column A	Column B
_____ 17. periodic table	a. a vertical column of elements in the periodic table
_____ 18. periods	b. the Group 0 elements
_____ 19. group	c. The Group 1A elements
_____ 20. representative elements	d. a portion of the Group B elements
_____ 21. alkali metals	e. an arrangement of elements according to similarities in their properties
_____ 22. transition metals	f. Group A elements
_____ 23. halogens	g. the horizontal rows of the periodic table
_____ 24. noble gases	h. the Group 7A elements

Part D Questions and Problems

Answer the following questions in the space provided.

25. List the elements of Group 5A. Tell whether each is a metal, nonmetal, or metalloid.

26. List three properties of metals.
