

Directed Reading A *continued*

13. Which electrons in an atom make chemical bonds? Why?

14. How can the periodic table help you determine the number of valence electrons?

TO BOND OR NOT TO BOND

_____ 15. What determines whether an atom will form bonds?

- a. number of electrons
- b. number of valence electrons
- c. number of protons
- d. number of neutrons

_____ 16. Which group on the periodic table contains elements that do not normally form chemical bonds?

- a. Group 2
- b. Group 6
- c. Group 10
- d. Group 18

17. The outermost energy level of an atom is considered full if the level contains _____ electrons.

18. Helium atoms only need _____ valence electrons to have a filled outermost energy level, because it only has _____ energy level(s).

19. The first energy level of any atom can only hold _____ electrons.

20. Why is it uncommon for noble gases to form chemical bonds?

21. Which is more likely to form bonds, an atom with 8 valence electrons or an atom with less than 8 valence electrons?

22. How can atoms with fewer than 8 valence electrons fill their outermost energy level? Use either sulfur or magnesium to explain the process.
