

7-1 Review and Reinforcement

Ionic Bonding

Complete each of the following sentences by filling in the appropriate word or phrase from the list below.

| | | | |
|------------|-----------|--------|------------------------|
| negative | noble gas | octet | electron configuration |
| positive | electrons | ions | polyatomic |
| crisscross | anion | cation | empirical formula |

1. An ionic bond is an attraction between oppositely charged ions.
2. Anions have a negative charge.
3. An atom becomes an ion by losing or gaining electrons.
4. The octet rule states that atoms tend to gain, lose, or share electrons in order to acquire a full set of valence electrons.
5. When sodium and chlorine form an ionic bond, both ions acquire the electron configuration of a(n) noble gas.
6. The atoms that make up polyatomic ions are bonded together by covalent bonds.
7. The crisscross method can be used to write the formula for an ionic compound.
8. The empirical formula of a compound denotes the ratio of ions in the compound.

If the statement is true, write "true." If it is false, change the underlined word or words to make it true. Write your answer on the line.

- | | |
|------------------------|--|
| <u>losing</u> | 9. Calcium becomes a monatomic cation by <u>gaining</u> two electrons. |
| <u>true</u> | 10. A cation has a <u>positive</u> charge. |
| <u>true</u> | 11. A binary ionic compound contains only <u>one</u> kind of cation and one kind of anion. |
| <u>polyatomic</u> | 12. <u>Monatomic</u> ions consist of more than one atom. |
| <u>seven</u> | 13. The Lewis dot diagram for chlorine, a group 7A element, has <u>six</u> electrons. |
| <u>true (released)</u> | 14. A great deal of energy is <u>produced</u> when an ionic compound is formed. |