

Visualizing Key Ideas

1. Copy and complete the following chart about types of chemical reaction. The first row is done for you.
Hint: Refer to Table 6.1, page 265, if you need help.

	Pattern in Reactants	Pattern in Products	Reaction Type
(a)	♥ + ♦	♥♦	Synthesis
(b)	■ □		
(c)	◇ □ + ▼ (a metal)		
(d)	◇ □ + ☼ (a non-metal)		
(e)			Combustion
(f)		■ ☺ + H ₂ O	
(g)	♣ ♀ + ☺ ♪		

Using Key Terms

2. State whether the following statements are true or false. If a statement is false, rewrite the underlined portion to make it true.
- Ions are atoms of the same element that differ in the number of neutrons found in the nucleus.
 - An acidic solution has a pH greater than 7.
 - Organic compounds always contain the element carbon.
 - A salt can be produced from the reaction of an inorganic compound and an organic compound.
 - A type of chemical reaction in which a metal reacts with an ionic compound is called synthesis.
 - Mass number is equal to the number of subatomic particles in the nucleus of an atom.
 - A substance that can increase the rate of a reaction without being used up in the reaction is called an isotope.
 - A nuclear reaction in which small nuclei combine to form a larger nucleus is called fission.

Checking Concepts

4

- Name three subatomic particles.
 - State the electric charge of each.
 - State the location of each within an atom.
- Draw a Bohr diagram for an atom that has 5 protons, 6 neutrons, and 5 electrons.
 - What is this element?
- Draw a Bohr diagram for an ion that contains 13 protons, 10 electrons, and 14 neutrons.
 - What element is this ion?
- Draw a Bohr diagram showing the arrangement of electrons in:
 - Ca
 - Ca²⁺
- Draw Lewis diagrams for:
 - NaCl
 - Na₂O
 - HF
 - NH₃
- What kind of compound is formed when only non-metals are present in the compound?
- State the law of conservation of mass.