

REVIEW

3

CHAPTER 3

Mixed Review

1. **Creative Thinking** The average atomic masses listed for some elements in the periodic table are very close to whole numbers, while most are not. What would cause the average atomic mass of an element to be close to a whole number?

2. **Understanding Systems** State the number of protons, total number of electrons, and total number of valence electrons each of the following has:

a. O^{2-}

b. Xe

c. Ca^{2+}

d. Na^+

3. **Applying Knowledge** Name the group described by each of the following statements. Tell how many valence electrons atoms of elements in that group have, and give an example of an element in that group.

a. These elements form ions with a 2+ charge, and they are reactive.

b. These elements easily lose an electron, and they are very reactive.

c. These elements usually do not react with other elements.

d. These elements easily gain an electron, and they are very reactive.

Chapter 3 Mixed Review, continued

4. Applying Knowledge Describe the relationship between an element's family, its number of valence electrons, and its reactivity.

5. Understanding Systems Which has more atoms, 100 g of gold, Au, or 100 g of neon, Ne? Which of the two samples has more protons?

6. Problem Solving Determine the mass in grams of each of the following:

- | | | | |
|-------|----------------------------------|-------|----------------------------------|
| _____ | a. 1.3 mol of silver, Ag | _____ | c. 0.672 mol of tin, Sn |
| _____ | b. 0.500 mol of radon, Rn | _____ | d. 3.5 mol of calcium, Ca |

7. Problem Solving Determine the amount in moles of each of the following:

- | | | | |
|-------|--------------------------------|-------|-------------------------------|
| _____ | a. 115 g of zinc, Zn | _____ | c. 224 g of iron, Fe |
| _____ | b. 45.5 g of copper, Cu | _____ | d. 107 g of helium, He |

8. Concept Mapping Complete the concept map below by writing the correct word or phrase in the lettered boxes.

