

## Chapter 3: Standard Review Worksheet

1. Why do the symbols for some elements seem to bear no relationship to the name for the element? Give several examples and explain.
2. What is a *compound*? Give examples.
3. Describe the points of Rutherford's model for the nuclear atom and how he tested this model. Based on his experiments, how did Rutherford envision the structure of the atom? How did Rutherford's model for atomic structure differ from Thomson's "plum pudding" model?
4. Which of the subatomic particles is responsible for the chemical behavior of a given type of atom? Why?
5. To what do the *atomic number* and the *mass number* of an isotope refer? How are specific isotopes indicated symbolically? Give an example and explain.
6. Describe the periodic table of the elements. How are the elements arranged in the table? What significance is there in the way the elements are arranged into vertical groups? How can the periodic table be used to predict what ion an element's atoms will form?
7. In terms of subatomic particles, how is a cation related to the atom from which it is formed? An anion? Does the nucleus of an atom change when an atom is converted into an ion?
8. Since ionic compounds are made up of electrically charged particles, why doesn't such a compound have an overall electrical charge?
9. Write the *symbol* and *atomic number* for each of the following elements: potassium, calcium, bromine, neon, aluminum, gold, mercury, and iodine.
10. Write the *name* and *atomic number* for each of the following elements:
  - a. Si
  - b. C
  - c. F
  - d. Be
  - e. O
  - f. Cr
11. Write the *name* and *chemical symbol* for each of the following elements:
  - a. 36
  - b. 92
  - c. 15
  - d. 79
  - e. 29
  - f. 8

Name \_\_\_\_\_ Section \_\_\_\_\_ Date \_\_\_\_\_

12. Indicate the number of protons, neutrons, and electrons in isolated atoms having the following nuclear symbols:

- a.  ${}_{35}^{79}\text{Br}$                       b.  ${}_{92}^{238}\text{U}$                       c.  ${}_{1}^1\text{H}$

13. What simple ion does each of the following elements most commonly form?

- a. Ag                                  c. Br                                  e. S  
b. Al                                  d. K                                  f. Ca

14. For each of the following simple ions, indicate the number of protons and electrons the ion contains:

- a.  $\text{H}^+$                                   c.  $\text{N}^{3-}$                                   e.  $\text{F}^-$