## ELEMENTS AND THE PERIODIC TABLE
## SIMPLE IONS

Complete the following table. Note that the name of a *nonmetallic* ion ends in *ide* while the name for a *metallic* ion uses the full name of the metal.

| Ion Name | Ion Symbol | Number of Protons | Number of Electrons | Number of Electrons Lost or Gained | Same Electrons as What Noble Gas? |
|---|---|---|---|---|---|
| e.g., fluoride | $F^-$ | 9 | 10 | gained one | neon |
| 1. | | 53 | 54 | | |
| 2. | | 16 | | gained two | |
| 3. potassium | | | | lost one | |
| 4. | $Ca^{2+}$ | | | | |
| 5. | | 35 | 36 | | |
| 6. | $Sr^{2+}$ | | | | |
| 7. | $H^+$ | | | | (none) |
| 8. | | 8 | | gained two | |
| 9. | | 12 | | lost two | |
| 10. aluminum | | | 10 | | |
| 11. | | 34 | 36 | | |
| 12. | $H^-$ | | | | |
| 13. lithium | | | | lost one | |
| 14. | $Rb^+$ | | | | |
| 15. | | 17 | 18 | | |

## ELEMENTS AND THE PERIODIC TABLE
## OVERVIEW OF PERIODICITY AND ATOMIC STRUCTURE

1. The extranuclear region of the atom, which makes up most of the volume of the atom, is occupied by _____.
2. Nearly all of the mass of any atom is made up of _____ and _____.
3. Elements 58 through 71 and 90 through 103 are called the _____ and _____.
4. $S^{2-}$ would have _____ electrons surrounding its nucleus.
5. An atom has 53 protons in its nucleus. In a neutral atom it will also have _____ electrons and it will _____ (gain/lose) _____ (number) electron(s) to acquire the electron population of the nearest noble gas, _____.
6. Elements 4, 12 and 20 are closely related chemically. The name of one other element which would fit into this family called the _____ is _____.
7. Element 19 has one electron taken from it. The symbol for its ion is _____.
8. An unknown element is a colorless gas at room temperature. Upon heating with lithium no reaction occurs. The family of elements to which the unknown element probably belongs is _____.
9. A soft metal reacts vigorously with water to produce hydrogen gas, $H_2$. This metal probably belongs to the _____ family.
10. The most reactive metal is _____ and the most reactive nonmetal is _____.
11. The elements which make up the B groups on the periodic table are called the _____ elements.
12. The number of electrons in the third energy level of a chlorine atom is _____.
13. The atomic number of a K atom is (greater/less) _____ than the atomic number of a Na atom.
14. The scientist who first proposed that electrons existed in only certain energy levels about the nucleus was _____.
15. The name of the ion formed by a bromine atom is _____.
16. The name of the ion formed by a calcium atom is _____.
17. The number of _____ in the nucleus of chlorine atoms may vary.
18. The number of electrons in the outermost energy level of a potassium ion is _____.
19. Atoms with the same number of protons but with a different number of neutrons in the nucleus are called _____.
20. The average mass of atoms for a particular element is called the _____ _____.
21. The scientist who proposed the Nuclear Model of the atom was _____.
22. The scientist who introduced the word *atom* and used experimental evidence to present the Atomic Theory wa _____.
23. The maximum numbers of electrons in the first three energy levels are respectively ____, ____ and ____.
24. The charges on simple ions formed from atoms in groups IA, IIA, IIIA, VA, VIA and VIIA are respectively ____ ____, ____, ____, ____, ____, and ____.