

NAME:

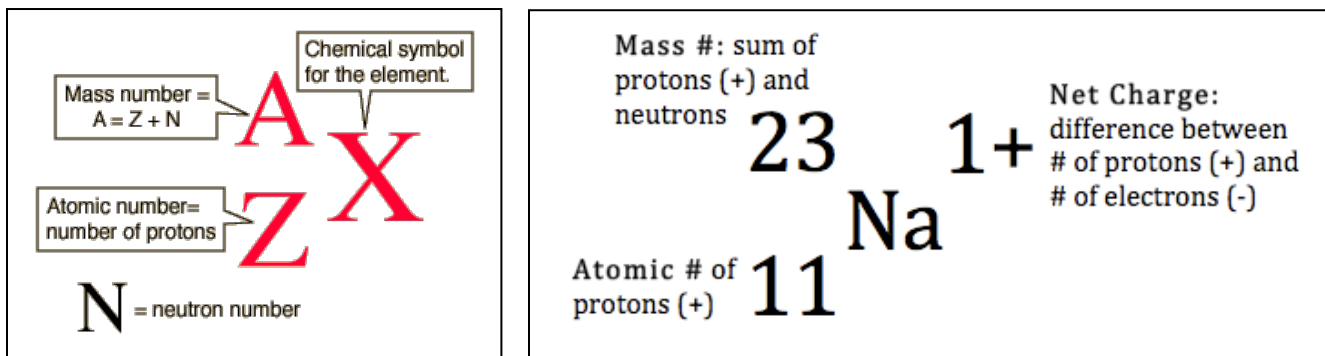
**HONORS CHEMISTRY**

SECTION:

## ATOMIC STRUCTURE

An atom is made up of subatomic particles: protons and neutrons (which are both found in the nucleus) and electrons (in the surrounding electron cloud). The atomic number is equal to the number of protons. The mass number is equal to the number of protons plus the number of neutrons. In a neutral atom, the number of protons equals the number of electrons. Ions are charged species formed by the gain or loss of electrons. The charge on an ion indicates an imbalance between protons and electrons—too many electrons produces a negative charge, while too few electrons produces a positive charge.

This information can be written as part of a chemical symbol:



Another notation for atoms gives the element name followed by the mass number, with a hyphen between them:

Carbon-12 is equivalent to  $^{12}_6\text{C}$

Complete the following table. You will need a periodic table. Use the mass number of the nuclide listed here

Atom or ion	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons
$^{185}_{74}\text{W}$					
$^{74}_{33}\text{As}$					
Lithium-6					
$^{77}_{34}\text{Se}^{-2}$					
Bromine-81					
Potassium-39					
$\text{=}_\text{--}$		107	47		47

Atom or ion	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons
${}_{51}^{122}\text{Sb}^{3+}$					
	26			31	23
		128	52		54
Tungsten-182					
${}^1_1\text{H}$		1			
Hydrogen-2					