

# Basic Atomic Structure Worksheet

Chemistry30 Name: \_\_\_\_\_

1. The 3 particles of the atom are:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

Their respective charges are:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

2. The number of protons in one atom of an element determines the atom's \_\_\_\_\_, and the number of electrons determines the \_\_\_\_\_ of the element.

3. The atomic number tells you the number of \_\_\_\_\_ in one atom of an element. It also tells you the number of \_\_\_\_\_ in a neutral atom of that element. The atomic number gives the "identity" of an element as well as its location on the periodic table. No two different elements will have the \_\_\_\_\_ atomic number.

4. The \_\_\_\_\_ of an element is the average mass of an element's naturally occurring atom, or isotope, taking into account the \_\_\_\_\_ of each isotope.

5. The \_\_\_\_\_ of an element is the total number of protons and neutrons in the \_\_\_\_\_ of the atom.

6. The mass number is used to calculate the number of \_\_\_\_\_ in one atom of an element. In order to calculate the number of neutrons you must subtract the \_\_\_\_\_ from the \_\_\_\_\_.

7. Give the symbol of and the number of protons in one atom of:

Lithium \_\_\_\_\_

Iron \_\_\_\_\_

Oxygen \_\_\_\_\_

Krypton \_\_\_\_\_

Bromine \_\_\_\_\_

Copper \_\_\_\_\_

Mercury \_\_\_\_\_

Helium \_\_\_\_\_

8. Give the symbol of and the number of electrons in a neutral atom of:

Uranium \_\_\_\_\_

Boron \_\_\_\_\_

Chlorine \_\_\_\_\_

Iodine \_\_\_\_\_

Xenon \_\_\_\_\_

9. Name the element which has the following numbers of particles:

a. 26 electrons, 29 neutrons, 26 protons \_\_\_\_\_

b. 53 protons, 74 neutrons \_\_\_\_\_

c. 2 electrons (neutral atoms) \_\_\_\_\_

d. 20 protons \_\_\_\_\_

e. 86 electrons, 125 neutrons, 82 protons \_\_\_\_\_

f. 0 neutrons \_\_\_\_\_

10. If you know ONLY the following information can you ALWAYS determine what the element is?  
(Yes/No)

a. Number of protons \_\_\_\_\_

b. Number of neutrons \_\_\_\_\_

c. Number of electrons in a neutral atom \_\_\_\_\_

d. Number of electrons \_\_\_\_\_