

Basic Atomic Structure Worksheet

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 isotopes, 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. Give the symbol of and the number of neutrons in one atom of:

(Mass numbers are ALWAYS whole numbers...show your calculations)

Barium-141 _____

Carbon-13 _____

Fluorine-20 _____

Europium-157 _____

Bismuth-211 _____

Hydrogen-3 _____

Magnesium-25 _____

Mercury-199 _____

10. 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 _____

11. 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 _____

12. Fill in the missing items in the table below.

NOTE: Assume all atoms are neutral in charge.

Name	Symbol	Z(atomic #)	A(mass #)	# protons	# electrons	# neutrons	Isotope Symbol
a.	Na					12	
b. _____-33		17					
c. Potassium-40							
d.	P					14	
e. iron-54							
f.				53			
g. silver					47	60	
h. _____-81		36					
i.	W					101	
j.		29					
k. _____-115				49			
l.				79		120	
m. _____-31					16		