

Basic Atomic Structure Worksheet

Name: _____

- The 3 particles of the atom are:
 - Protons**
 - Neutrons**
 - Electrons**
 Their respective charges are:
 - positive +**
 - neutral 0**
 - negative -**
- The number of protons in one atom of an element determines the atom's **identity**, and the number of electrons determines the **charge** of the element.
- The atomic number tells you the number of **protons** in one atom of an element. It also tells you the number of **electrons** 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 **same** atomic number.
- The **atomic mass** of an element is the average mass of an element's naturally occurring atom, or isotopes, taking into account the **mass** of each isotope.
- The **mass number** of an element is the total number of protons and neutrons in the **nucleus** of the atom.
- The mass number is used to calculate the number of **neutrons** in one atom of an element. In order to calculate the number of neutrons you must subtract the **protons** from the **mass number**.
- Give the symbol of and the number of protons in one atom of:

Lithium **Li, 3**
 Iron **Fe, 26**
 Oxygen **O, 8**
 Krypton **Kr, 36**
 Bromine **Br, 35**
 Copper **Cu, 29**
 Mercury **Hg, 80**
 Helium **He, 2**

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

Uranium **U, 92**
 Boron **B, 5**
 Chlorine **Cl, 17**
 Iodine **I, 53**
 Xenon **Xe, 54**

- Give the symbol of and the number of neutrons in one atom of:
 (Mass numbers are ALWAYS whole numbers...show your calculations)

	Symbol	Calculation	# neutrons		Symbol	Calculation	# neutrons
Barium	Ba	$n^0 = 137 - 56$	81	Bismuth	Bi	$n^0 = 209 - 83$	126
Carbon	C	$n^0 = 12 - 6$	6	Hydrogen	H	$n^0 = 1 - 1$	0
Fluorine	F	$n^0 = 19 - 9$	10	Magnesium	Mg	$n^0 = 24 - 12$	12
Europium	Eu	$n^0 = 152 - 63$	89	Mercury	Hg	$n^0 = 201 - 80$	121

Word Bank for questions 2-6

mass number
mass number
neutrons
electrons
nucleus
identity
charge
protons
protons
same
mass
atomic mass