

Parts of an Atom

Atom - is electrically neutral. ($\# p^+ = \# e^-$)
- is composed of a nucleus containing protons and neutrons, and electrons that surround the nucleus.

Atomic Number - is the number of protons found in the nucleus of an atom.

Protons - are subatomic particles possessing a positive charge.

Neutrons - are subatomic particles possessing a neutral charge.

Electrons - are subatomic particles possessing a negative charge.
For an atom, the electrons are equal to the atomic number.

Isotope - is a form of an element in which the atoms have the same number of protons as all other forms of that element, but it has a **different number of neutrons and therefore a different atomic mass.**

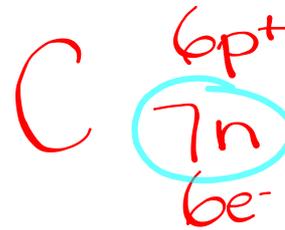
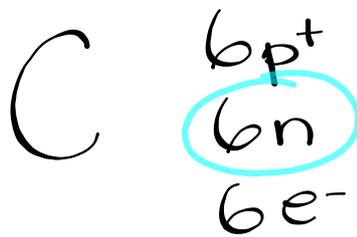
Mass Number - is the sum of the number of protons and neutrons.

Carbon - 6 protons and 6 neutrons has a mass number of 12.

Another isotope of ^{12}C is ^{13}C , which has 6 protons and 7 neutrons.

Isotope Notation:

ISOTOPES

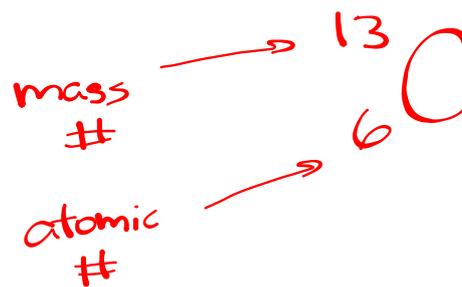


mass # 12

mass # 13

Carbon-12

Carbon-13



SUBATOMIC PARTICLES

	LOCATION	CHARGE	RELATIVE SIZE
PROTONS	nucleus	+ive	"big" 1 a.m.u.
NEUTRONS	nucleus	neutral	"big" 1 a.m.u.
ELECTRONS	outside nucleus	-ive	"massless"

Isotopes of Carbon

always has 6

changes

Isotope

p

n

${}^8\text{C}$	6	2
${}^9\text{C}$	6	3
${}^{10}\text{C}$	6	4
${}^{11}\text{C}$	6	5
${}^{12}\text{C}$	6	6
${}^{13}\text{C}$	6	7
${}^{14}\text{C}$	6	8
${}^{15}\text{C}$	6	9
${}^{16}\text{C}$	6	10
${}^{17}\text{C}$	6	11
${}^{18}\text{C}$	6	12
${}^{19}\text{C}$	6	13
${}^{20}\text{C}$	6	14
${}^{21}\text{C}$	6	15

most common

Homework

Section 4.3 p. 110-118

Practice Problems #15-20