

The Atom

Atom - the _____ particle of an element that still retains the _____ of the element

Subatomic Particles

Particle	Relative Mass	Relative Charge	Location
Proton			
Neutron			
Electron			

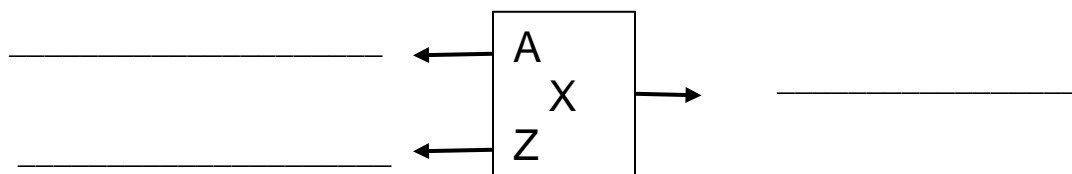
Atomic Number – the number of _____ in the nucleus

Mass Number – the number _____ in the nucleus

Number of neutrons = _____ – _____

Number of electrons = number of _____ (in a neutral _____ and not an _____)

Standard Atomic Notation:



Atomic Mass – mass of each element with respect to carbon having a mass of _____ (atomic mass units) 1.66×10^{-27} kg

Isotopes – atoms of an element that have the same number of protons but different numbers of neutrons

Ex.	H-1	H	_____	p	n
	H-2	H	_____	p	n
	H-3	H	_____	p	n

Average Atomic Mass – the average of the masses of all the element's _____

- to calculate we need to know the _____ and the _____ of each isotope
- use a _____

Formula

Average atomic mass
 = (atomic mass of isotope A) x (abundance of isotope A) + (atomic mass of isotope B) x (abundance of isotope B) +

Example: Natural argon contains 99.60% Ar-40, 0.34% Ar-36, and 0.06% Ar-38. Calculate the average atomic mass of argon.

Practice: Complete the table below to find the number of subatomic particles in the first twenty elements. Use your periodic table to find the atomic number and mass number for each element.

Element Name	Symbol	Atomic #	Mass #	Standard Atomic Notation	# of protons	# of electrons	# of neutrons
Hydrogen							
Helium							
Lithium							
Beryllium							
Boron							
Carbon							
Nitrogen							
Oxygen							
Fluorine							
Neon							
Sodium							
Magnesium							
Aluminum							
Silicon							
Phosphorus							
Sulfur							
Chlorine							
Argon							
Potassium							
Calcium							