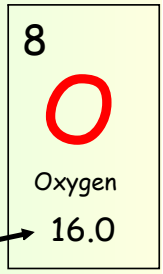
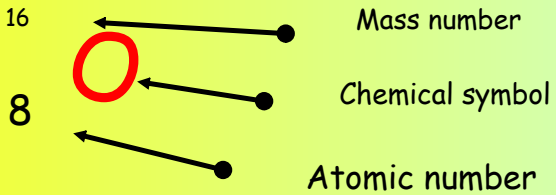
Counting subatomic particles – Important points page 87-88

- The number of **Protons** = atomic number
- The number of **Electron** = Atomic Number
- **Mass number** = # of **Protons** + # of **Neutrons**



- Number of **Neutrons** = Mass number – atomic number

Standard Atomic Notation



We can represent the number of subatomic particles by using Standard Atomic Notation, an internationally recognized system that allows anyone to communicate information about any atom.

electrons = 8

Protons = 8

Neutrons = 8
16 - 8

$^{27}_{13}Al$

electrons = 13

Protons = 13

Neutrons = 27 - 13
= 14

Protons, Neutrons, and Electrons Practice Worksheet

Fill in the blanks in the following worksheet. Please keep in mind that the isotope represented by each space may NOT be the most common isotope or the one closest in atomic mass to the value on the periodic table.

Atomic symbol	Atomic number	Protons = Atomic #	Neutrons	Electrons = Atomic #	Atomic mass
B	5	5	6	5	11
Na	11	11	13	11	24
Ga	31	31	37	31	70
				39	89
	29		35		
		43			100
Pb					207
			102	70	
		89			225
Mo			53		
	81				206
	100		159		
No					261
Yb					172
		106	159		

Solutions for the Protons, Neutrons, and Electrons Practice Worksheet:

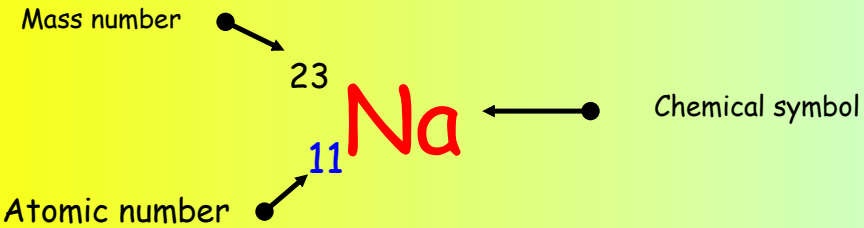
Mass - P

P + N

Atomic symbol	Atomic number	Protons (Atomic #)	Neutrons	Electrons (atomic #)	Atomic mass
B	5	5	6	5	11
Na	11	11	13	11	24
Ga	31	31	37	31	68
Y	39	39	50	39	89
Cu	29	29	35	29	64
Tc	43	43	57	43	100
Pb	82	82	125	82	207
Yb	70	70	102	70	172
Ac	89	89	136	89	225
Mo	42	42	53	42	95
Tl	81	81	125	81	206
Fm	100	100	159	100	259
No	102	102	159	102	261
Yb	70	70	101	70	172
Sg	106	106	159	106	265

Standard Atomic Notation

This notation tells us:



electrons = 11

Protons = 11

Neutrons = 23 - 11 = 12

of Protons = Atomic #
# of Protons = 11

# of Neutrons = Atomic Mass - # of Protons

# of Neutrons = 23 - 11

# of Neutrons = 12

Test question

Standard Notation

mass → 24

$^{24}_{12}Mg$

atomic # → 12

protons : 12

electrons = 12

Neutron = 24 − 12 = 12

Mass

Atomic # Symbol

Write the standard atomic notation for

i) potassium

$^{39}_{19}K$

ii) chlorine

$^{35}_{17}Cl$

Subatomic Particle Worksheet

&

page 89
Question 3, 4

Charge Particles

When an atom has the same number of protons and electrons it is called a **neutral atom**.

If an atom has a different number of electrons than protons (either extra electrons or missing electrons), it is called an **ion**.

Attachments

Protons, electrons neutrons assignments.docx