AAA Minor league baseball in Albuquerque, NM affiliated with LA Dodgers

ISOTOPES

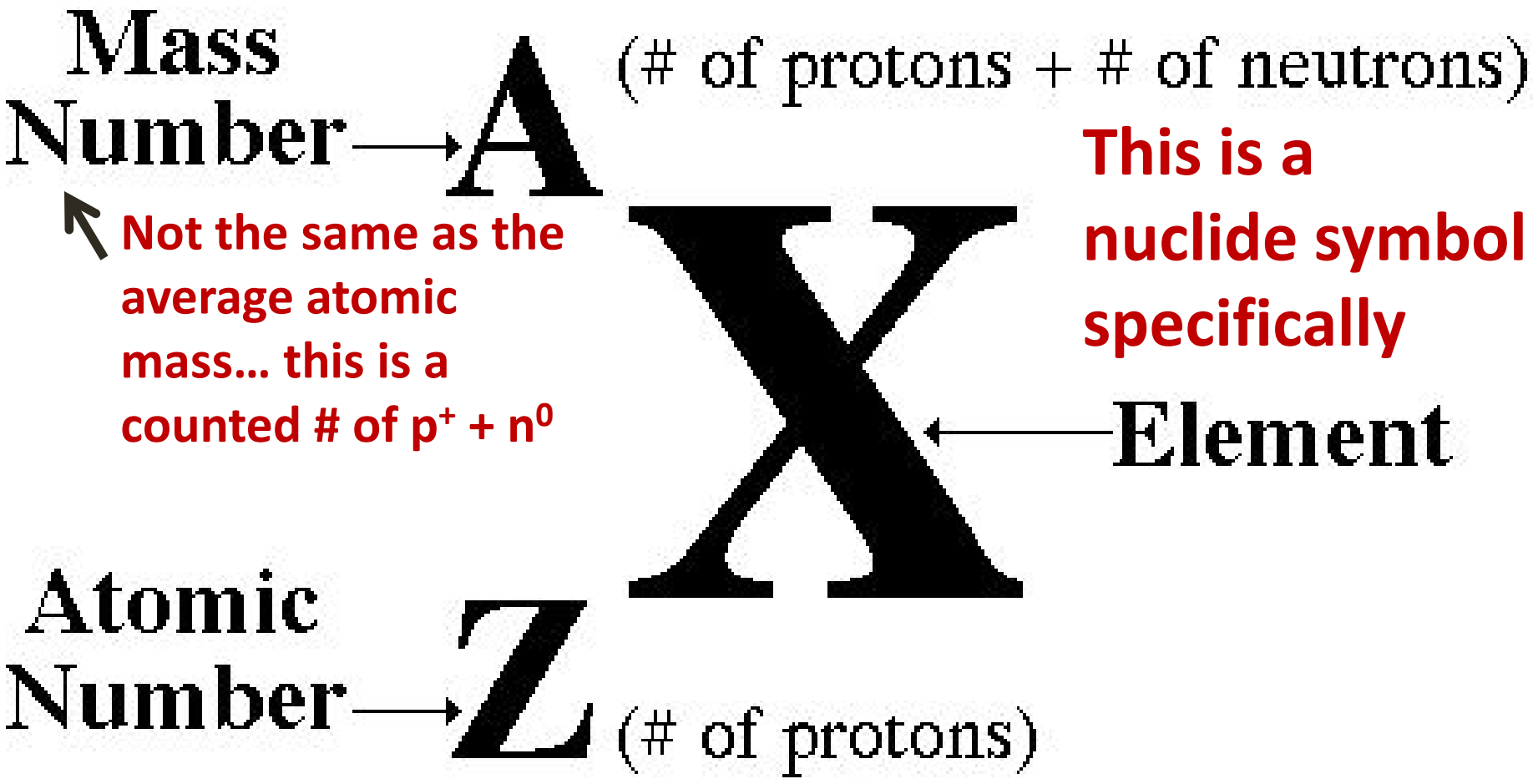
- Atoms of the same element (same #p^+)
- Different #n^0
- Changes the average atomic mass of an element
- Most elements exist as mixtures of isotopes

Formula	**Name**	**# p+**	**# e-**	**# n°**
^{1}H	Protium (common form)	1	1	0

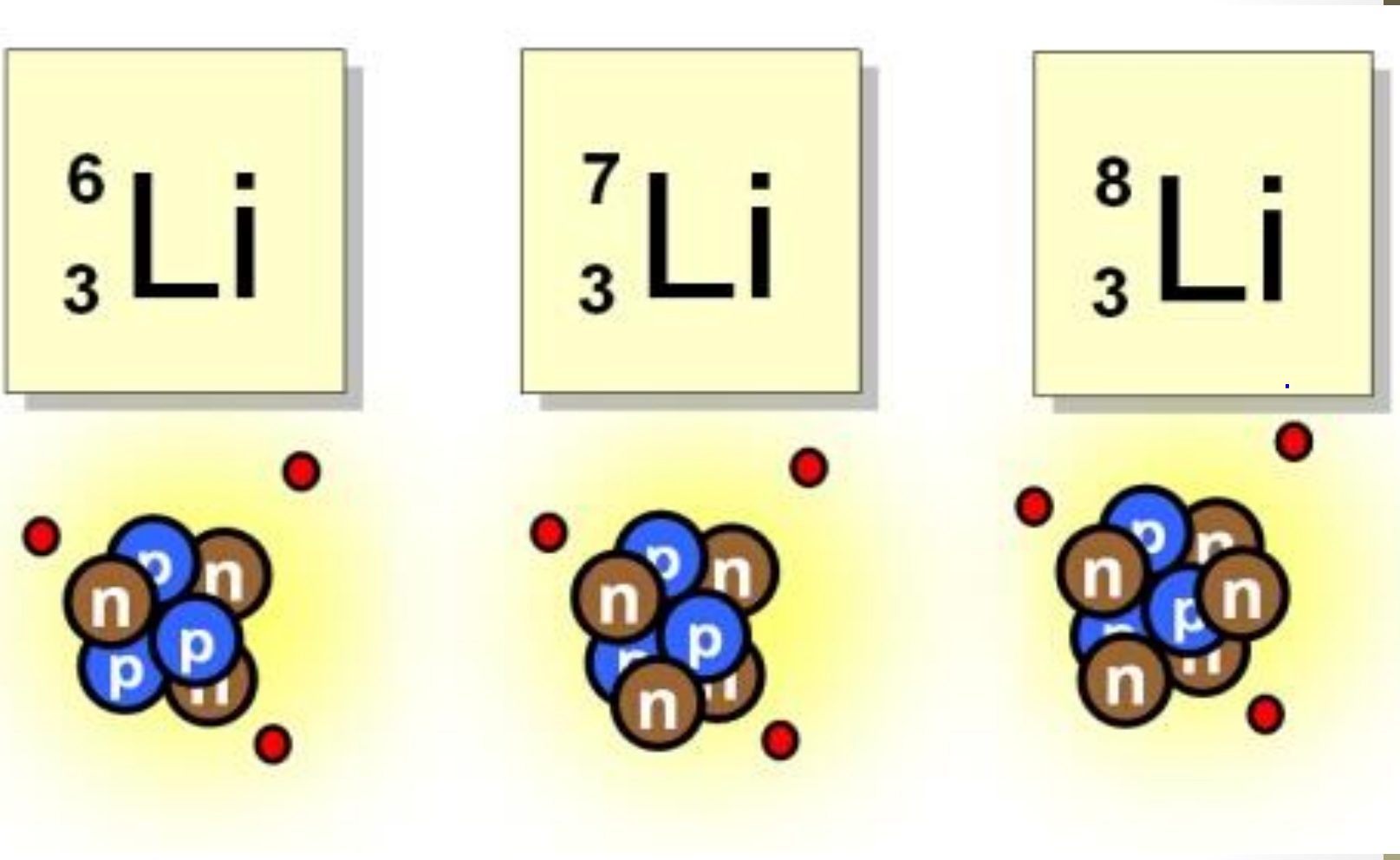
Formula	**Name**	**# p+**	**# e-**	**# n°**
^{1}H	Protium (common form)	1	1	0
^{2}H	Deuterium	1	1	1

Formula	Name	# p+	# e-	# n°
^{1}H	Protium (common form)	1	1	0
^{2}H	Deuterium	1	1	1
^{3}H	Tritium	1	1	2

Isotope Symbols



Examples:



More ways to write isotopes…

Li-A Lithium-A

A is the mass number ($p^+ + n^0$)

1. Write the nuclide symbol for the three isotopes of chromium.

Chromium – 50

Chromium – 52

Chromium – 53

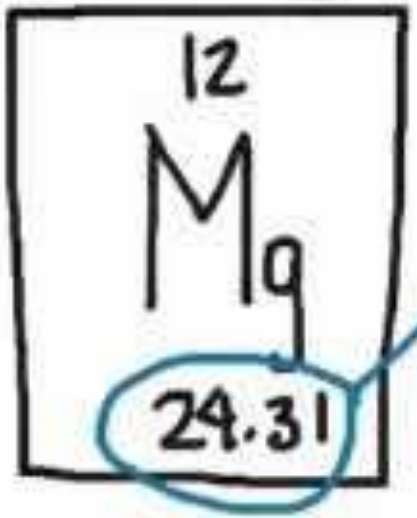
2. Identify the # of p^+, e^- & n^0 in each.

**Side note: Remember for neutral atoms… $\#e^- = \#p^+$

Average Atomic Mass

- Average (weighted) mass of all isotopes for an element
- Represented by the decimal number on periodic table (like your averages in class)
- Unlike the mass number which is counted ($p^+ + n^0$)

Calculating average atomic mass



Average atomic mass

Weighted average of masses of all natural isotopes of an element by their abundance.

isotope	% abundance		mass		portion of average
Mg-24		x			
Mg-25		x			
Mg-26		x			

Practice:

Copper has 2 isotopes. The relative abundances are:

69.2% for mass 62.93

30.8% for mass 64.93.

- Calculate the average atomic mass for copper.

HONORS ONLY:

Bromine has two isotopes:

Isotope 1(Br-79): 78.92 amu
Istotope 2 (Br-81): 80.92 amu

Calculate the % abundance of each using the average atomic mass from the periodic table.