Calculating Relative Atomic Mass Average Atomic Mass	Name:
	Period:
	Date: 8/28/18

Relative Atomic Mass (A_r) is calculated as a Weighted average of atoms in a sample of ***naturally occurring*** Isotopes.

$$\textit{Avg. Mass} = (\text{Mass}_1)(\%_1) + (\text{Mass}_2)(\%_2) + \ldots.$$

Example 1: There are two naturally occurring Isotopes of Copper:

Copper – 63 Copper – 65

If you had to guess, what would the average atomic mass be based on this information?

64 a.m.u. (atomic mass units)

What does the Periodic Table show the average atomic mass to be?

63.546

In reality, the copper isotopes exist as follows:

Copper – 63: actual mass = 62.93 amu
natural abundance = 69.15%

Copper – 65: actual mass = 64.93 amu
natural abundance = 30.85%

Use this information to calculate the actual ~~Average~~ Relative Atomic Mass.

R.A.M = (62.93)(0.6915) + (64.93)(0.3085)

= 43.52 + 20.03

R.A.M. = 63.55 amu

Example 2: Neon exists naturally as the isotopes Neon-20 and Neon-22.

Which isotope is in greater natural abundance?

P.T. → R.A.M. = 20.179 — closer to → Neon-20

Example 3: If an unusually selected sample of sulfur contained 90% Sulfur-32 and 10% Sulfur-34, what is its average atomic mass?

$$R.A.M. = (32)(0.90) + (34)(0.10)$$

$$= 29 + 3.4$$

R.A.M. = 32.4 a.m.u.