

Freshmen Transition

Assignment 1J – Average Atomic Mass (Part 2)

30 Points

Calculate the average atomic mass for the following isotopes

Lithium has the following isotopes

Isotope	Atomic Mass	Fractional Abundance
<u>Li-6</u>	<u>6 amu</u>	<u>0.0759</u>
<u>Li-7</u>	<u>7 amu</u>	<u>0.9241</u>

Calculate the Average Atomic Mass of Li

Ratio Li-6 + Ratio Li-7 =

Avg. Atomic Mass

Isotope	Atomic Mass	Frac. Abund.	Ratio
Li-6	6 amu	0.0759	0.46 amu
Li-7	7 amu	0.9241	6.47 amu

$$\begin{aligned} \text{Avg. Li} &= 0.46 \text{ amu} + 6.47 \text{ amu} \\ &= \underline{6.93 \text{ amu}} \end{aligned}$$

Antimony has the following isotopes

Isotope	Atomic Mass	Fractional Abundance
Sb-121	121 amu	0.5721
Sb-123	123 amu	0.4279

Calculate the Average Atomic Mass of Sb

Ratio Sb-121 + Ratio Sb-123 =

Avg. Atomic Mass

Isotope	Atomic Mass	Frac. Abund.	Ratio
Sb-121			
Sb-123			

Magnesium has the following isotopes

Isotope	Atomic Mass	Fractional Abundance
Mg-24	24 amu	0.7899
Mg-25	25 amu	0.1000
Mg-26	26 amu	0.1101

Calculate the Average Atomic Mass of Mg

Ratio Mg-24 + Ratio Mg-25 + Ratio Mg-26

= Avg. Atomic Mass

Isotope	Atomic Mass	Frac. Abund.	Ratio
Mg-24			
Mg-25			
Mg-26			

Neon has the following isotopes

Isotope	Atomic Mass	Fractional Abundance
Ne-20	20 amu	0.9048
Ne-21	21 amu	0.0038
Ne-22	22 amu	0.0925

Calculate the Average Atomic Mass of Ne
 $\text{Ratio Ne-20} + \text{Ratio Ne-21} + \text{Ratio Ne-22}$
 $= \text{Avg. Atomic Mass}$

Isotope	Atomic Mass	Frac. Abund.	Ratio
Ne-20			
Ne-21			
Ne-22			

Tungsten has the following isotopes

Isotope	Atomic Mass	Fractional Abundance
W-182	182 amu	0.2650
W-183	183 amu	0.1431
W-184	184 amu	0.3064
W-186	186	0.2843

Calculate the Average Atomic Mass of W
 $\text{Ratio W-182} + \text{Ratio W-183} + \text{Ratio W-184} +$
 $+ \text{Ratio W-186} = \text{Avg. Atomic Mass}$

Isotope	Atomic Mass	Frac. Abund.	Ratio
W-182			
W-183			
W-184			
W-186			

Nickel has the following isotopes

Isotope	Atomic Mass	Fractional Abundance
Ni-58	58 amu	0.6808
Ni-60	60 amu	0.2622
Ni-61	61 amu	0.0114
Ni-62	62 amu	0.0456

Calculate the Average Atomic Mass of Ni
 $\text{Ratio Ni-58} + \text{Ratio Ni-60} + \text{Ratio Ni-61} +$
 $\text{Ratio Ni-62} = \text{Avg. Atomic Mass}$

Isotope	Atomic Mass	Frac. Abund.	Ratio
Ni-58			
Ni-60			
Ni-61			
Ni-62			