

### Average Atomic Mass Practice Problems - 1

1. What is the atomic mass of hafnium if, out of every 100 atoms, 5 have a mass of 176, 19 have a mass of 177, 27 have a mass of 178, 14 have a mass of 179, and 35 have a mass of 180.0?

#### Calculate the % Abundance

Hafnium-176

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \times 100 = \boxed{\phantom{00}}$$

Hafnium-177

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \times 100 = \boxed{\phantom{00}}$$

Hafnium-178

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \times 100 = \boxed{\phantom{00}}$$

Hafnium-179

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \times 100 = \boxed{\phantom{00}}$$

Hafnium-180

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \times 100 = \boxed{\phantom{00}}$$

#### Convert % Abundance to Decimals

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

#### Use the Equation to Calculate Average Atomic Mass

$$(\boxed{\phantom{00}} \times \boxed{\phantom{00}}) + (\boxed{\phantom{00}} \times \boxed{\phantom{00}}) + (\boxed{\phantom{00}} \times \boxed{\phantom{00}}) + (\boxed{\phantom{00}} \times \boxed{\phantom{00}}) + (\boxed{\phantom{00}} \times \boxed{\phantom{00}}) = \boxed{\phantom{00}}$$

2. Calculate the average atomic mass of lithium, which occurs as two isotopes that have the following atomic masses and abundances in nature: 6.017 amu, 7.30% and 7.018 amu, 92.70%.

#### Calculate the % Abundance

This is already completed in the problem for you.

#### Convert % Abundance to Decimals

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

$$\boxed{\phantom{00}} \rightarrow \boxed{\phantom{00}}$$

#### Use the Equation to Calculate Average Atomic Mass

$$(\boxed{\phantom{00}} \times \boxed{\phantom{00}}) + (\boxed{\phantom{00}} \times \boxed{\phantom{00}}) = \boxed{\phantom{00}}$$