Average Atomic Mass Worksheet

1) Rubidium has two common isotopes, $^{85}$Rb and $^{87}$Rb. If the abundance of $^{85}$Rb is 72.2% and the abundance of $^{87}$Rb is 27.8%, what is the average atomic mass of rubidium?

2) Uranium has three common isotopes. If the abundance of $^{234}$U is 0.01%, the abundance of $^{238}$U is 0.71%, and the abundance of $^{238}$U is 99.28%, what is the average atomic mass of uranium?

3) Titanium has five common isotopes: $^{46}$Ti (8.0%), $^{47}$Ti (7.8%), $^{48}$Ti (73.4%), $^{49}$Ti (5.5%), $^{50}$Ti (5.3%). What is the average atomic mass of titanium?

4) Explain why atoms have different isotopes. In other words, how is it that helium can exist in three different forms?
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Calculate the average atomic masses. Round all answers to two decimal places.

5. 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?

6. Iodine is 80% $^{127}$I, 17% $^{126}$I, and 3% $^{128}$I. Calculate the average atomic mass of iodine.

7. Calculate the average atomic mass of gold with the 50% being gold-197 and 50% being gold-198.

8. 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%.

9. Hydrogen is 99% $^1$H, 0.8% $^2$H, and 0.2% $^3$H. Calculate its average atomic mass.