

Average Atomic Mass

Calculate the average atomic masses. Round all answers to two decimal places.

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?
2. Iodine is 80% ^{127}I , 17% ^{126}I , and 3% ^{128}I . Calculate the average atomic mass of iodine.
3. Calculate the average atomic mass of gold with the 50% being gold-197 and 50% being gold-198.
4. Calculate the average atomic mass of lithium, which occurs as two isotopes that have the following atomic masses and abundances in nature: 6.017 u, 7.30% and 7.018 u, 92.70%.
5. Hydrogen is 99% ^1H , 0.8% ^2H , and 0.2% ^3H . Calculate its average atomic mass.

6. Calculate the average atomic mass of magnesium using the following data for three magnesium isotopes. Round to 3 decimal places.

<u>Isotope</u>	<u>mass (u)</u>	<u>relative abundance</u>
Mg-24	23.985	0.7870
Mg-25	24.986	0.1013
Mg-26	25.983	0.1117

7. Calculate the average atomic mass of iridium using the following data for two iridium isotopes.

<u>Isotope</u>	<u>mass (u)</u>	<u>relative abundance</u>
Ir-191	191.0	0.3758
Ir-193	193.0	0.6242

8. Lithium has two naturally occurring isotopes: lithium-6 and lithium-7. If the average atomic mass of lithium is 6.941 amu, which isotope is the most abundant? How do you know?