

Name _____

Isotopes

Determine the Average atomic mass for each of the following:

- 1) Oxygen has three common isotopes present in the following percentages: oxygen-16 at 99.760%, oxygen-17 at 0.040000%, and oxygen-18 at 0.20000%. What is the average atomic mass of oxygen?
- 2) Uranium has three common isotopes present in the following percentages: uranium-234 at 0.0050000%, uranium-235 at 0.072000%, and uranium-238 at 99.275%. What is the average atomic mass of uranium?
- 3) Iron has four common isotopes present in the following percentages: iron-54 at 5.800%, iron-56 at 91.80%, iron-57 at 2.100%, and iron-58 at 0.3000%. What is the average atomic mass of iron?
- 4) Calcium has six common isotopes present in the following percentages: calcium-40 at 96.941%, calcium-42 at 0.6470%, calcium-43 at 0.1350%, calcium-44 at 2.086%, calcium-46 at 0.004000%, and calcium-48 at 0.1870%. What is the average atomic mass of calcium?
- 5) Strontium has four common isotopes present in the following percentages: strontium-84 at 0.5000%, strontium-86 at 9.900%, strontium-87 at 7.000%, and strontium-88 at 82.60%. What is the average atomic mass of strontium?
- 6) Tungsten has five common isotopes present in the following percentages: tungsten-180 at 0.10000%, tungsten 182 at 26.300%, tungsten 183 at 14.300%, tungsten-184 at 30.700%, and tungsten-186 at 28.600%. What is the average atomic mass of tungsten?
- 7) Tin has 10 naturally occurring isotopes present in the following percentages: tin-112 at 1.0000%, tin-114 at 0.70000%, tin-115 at 0.40000%, tin-116 at 14.700%, tin-117 at 7.7000%, tin-118 at 24.300%, tin-119 at 8.6000%, tin-120 at 32.400%, tin-122 at 4.6000%, and tin-124 at 5.6000%. What is the average atomic mass of tin?

Find the percentage of each isotope for the following:

- 8) Lithium has an average atomic mass of 6.941amu. If it is made up of two isotopes of that have atomic masses of 6.00amu and 7.00amu, then what is the percentage occurrence of each isotope?
- 9) Silver is made up of two isotopes that have an average atomic mass of 107.87amu. If the two isotopes of silver are Ag-107, and Ag-108, then what is the percent occurrence of each isotope?
- 10) Sulfur is made up of three isotopes that have an average atomic mass of 32.06amu. If the three isotopes are S-32, S-33, and S-34, and S-34 has a 4.22% occurrence, then what is the percent occurrence of the other two isotopes?
- 11) Cadmium is made up of three isotopes that have an average atomic mass of 112.41amu. If the three isotopes are Cd-111, Cd-112, and Cd-114, and Cd-114 has a 23.25% occurrence, then what is the percent occurrence of the other two isotopes?