

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

### Average Atomic Mass

1. Calculate the average atomic mass of sulfur if 95.00% of all sulfur atoms are sulfur-32 and have a mass of 31.972 amu, 0.76% is sulfur-33 with a mass of 32.971 amu and 4.22% is sulfur-34 with a mass of 33.967 amu.
2. Copper used in wires comes in two isotopes,  $^{63}\text{Cu}$  and  $^{65}\text{Cu}$ .  $^{63}\text{Cu}$  has an atomic mass of 62.9298 amu and an abundance of 69.09%. The other isotope has an abundance of 30.91% and a mass of 63.546 amu. Calculate the recorded atomic mass of copper.
3. There are three isotopes of silicon. They have mass numbers of 28, 29 and 30. The average atomic mass of silicon is 28.086 amu. Which isotope has the highest % abundance and which has the lowest?  
Highest \_\_\_\_\_ Lowest \_\_\_\_\_
4. Calculate the average atomic mass of bromine. Bromine-79 has an atomic mass of 78.92 amu and a relative abundance of 50.69%. The other major isotope of bromine, bromine-81, has an atomic mass of 80.92 amu and a relative abundance of 49.31%.
5. Uranium is used in nuclear reactors and is a rare element on earth. Uranium has three common isotopes. If the abundance of  $^{234}\text{U}$  is 0.0590%, the abundance of  $^{235}\text{U}$  is 0.7202%, and the abundance of  $^{238}\text{U}$  is 99.275%, what is the average atomic mass of uranium?
6. Naturally occurring chlorine that is put in pools is 75.53 percent  $^{35}\text{Cl}$  (mass = 34.969 amu) and 24.47 percent  $^{37}\text{Cl}$  (mass = 36.966 amu). Calculate the average atomic mass.