Name _____ Date _____ Period _____

Atomic Mass Problems

The object of this exercise is to develop the ability of working atomic mass problems. Express all answers to **two decimal places**. Show all work and include any units.

Example: There are two naturally occurring isotopes of silver: Ag-107 and Ag-109. The relative abundance of Ag-107 is 51.84 and Ag-109 is 46.16. Find average atomic mass. Change % to regular number then multiply by the mass and add the numbers together to find the weighed average. (0.5184 x 107) + (0.4816 x 109) = 107.96 amu

_____ 1. There are two naturally occurring isotopes of Boron: Boron-10 and Boron -11. If the relative abundance of Boron-10 is 19.91% and boron-11 is 80.09%, what is the average atomic mass of Boron?

_____ 2. There are two naturally occurring isotopes of Chlorine: Chlorine-35 and Chlorine-37. If the relative abundance of Chlorine-35 is 75.78% and Chlorine-37 is 24.22%, what is the average atomic mass of Chlorine?

_____ 3. There are two naturally occurring isotopes of Copper: Copper-63 and Copper-65. If the relative abundance of Copper-63 is 69.17% and Copper-65 is 30.83%, what is the atomic mass of Copper?

_____ 4. There are two naturally occurring isotopes of Gallium: Gallium-69 and Gallium-71. If the relative abundance of Gallium-69 is 60.11% and Gallium-71 is 39.89%, what is the atomic mass of Gallium?

_____ 5. Rhenium exists as two naturally occurring isotope: 37.4% Re-185 and 62.6% Re-187. Find average atomic mass.

_____ 6. There are two naturally occurring isotopes of Antimony. If the relative abundance of Sb-121 is 57.21 and Sb-123 is 42.79, what is the average atomic mass?

_____7. Rubidium is found with the following composition: 72.17% Rb-85 and 27.83% Rb-87. Find average atomic mass.

_____ 8. Find the average atomic mass if there is 37.3% Ir-191 and 62.7% Ir-193.

_____9. Magnesium is found with the following composition: 78.9% Mg-24, 10.00% Mg-25, and 11.01 % Mg-26. What is the average atomic mass?

_____10. Silicon exists in nature as three isotopes: 92.23% silicon-28, 4.68% silicon-29, and 3.09% silicon-30.

_____ 11. Zinc exists in nature as five isotopes. Zn-64 occurs 48.63%, Zn-66 occurs 27.90%, Zn-67 occurs 4.10%, Zn-68 occurs 18.75% and Zn-70 occurs 0.62%. What is the atomic mass of Zinc?