NAME: _____

PERIOD: ____

ISOTOPES OF PENNIES POSTLAB

CALCULATING ATOMIC MASS

EXAMPLE:

There are 2 naturally-occurring isotopes of chlorine. Their relative abundance (how frequently they occur in nature) along with their mass is shown below:

Isotope	Abundance	Mass (in AMU)
Chlorine-35	75.77%	34.968852
Chlorine-37	24.23%	36.965903

First, change the percent to a decimal by moving the decimal point to the left two places:

Chlorine-35	.7577
Chlorine-37	.2423

Now multiply the decimal by the mass and add the totals:

.7577	x	34.698852	=	26.29132
.2423	x	36.965903	=	8.95683
Add the totals:				35.2481

ATOMIC MASS OF MAGNESIUM: **35.24 AMU**

(Notice in this case, I can only keep 4 significant figures in my answer!)

DIRECTIONS:

Calculate the atomic mass of the following elements. Show all work. Place answer in box on right.

1. Calculate the average mass of potassium if the abundance and atomic mass are:

Isotope	Abundance	Mass (in AMU)
Potassium-39	93.12%	38.964
Potassium-41	6.88%	40.962

Atomic Mass: _____

2. Calculate the atomic mass of Nitrogen.

Isotope	Abundance	Mass (in AMU)
Nitrogen-14	99.63%	14.003074
Nitrogen-15	0.37%	15.000108

Atomic Mass: _____

3. Calculate the atomic mass of Magnesium.

Isotope	Abundance	Mass (in AMU)
Magnesium-24	78.99%	23.985
Magnesium-25	10.00%	24.986
Magnesium-26	11.01%	25.983

Atomic Mass: _____

ON THE BACK: Write a short summary explaining how this lab illustrates the concepts that you tried to explain at the beginning of the lab (mainly: What the term "*weighted average mass*" and others mean *in your own words*).