

## CH 105 Supplemental Instruction

Leader: Hilary Flippo

Email: hflippo@uab.edu

Website: CH105.yolasite.com

Sessions: Monday, 1:15-2:15, EB 128

Wednesday, 3:30-4:30, EB 133

Office Hour: Thursday, 3:30-4:30, EB 242 (Academic Success Center)

### Atomic Symbols:

1. Write atomic symbols for the following elements including mass number and atomic number.

a. He  ${}^4_2\text{He}$

b. Al  ${}^{27}_{13}\text{Al}$

c. Ag  ${}^{108}_{47}\text{Ag}$

Mass #  
Atomic # X (chemical symbol)

2. Define the following:

a. Atomic Number: Number of protons, identity of element.

b. Mass Number: protons + neutrons

c. Isotope: atoms of the same element w/ differing numbers of neutrons.

### Atomic Mass Problems:

1. The natural abundance for boron isotopes is: 19.9%  ${}^{10}\text{B}$  (10.013 amu) and 80.1%  ${}^{11}\text{B}$  (11.009 amu). Calculate the atomic weight of boron.

X turn your % abundances into decimal form!

$$\text{Atomic Weight} = \underbrace{(.199 \times 10.013)}_{\text{isotope 1}} + \underbrace{(.801 \times 11.009)}_{\text{isotope 2}}$$

$$= 1.992587 \text{ amu} + 8.818209 \text{ amu}$$

$$\boxed{= 10.810796 \text{ amu}}$$

2. Copper exists as two isotopes:  $^{63}\text{Cu}$  (62.9298 amu) and  $^{65}\text{Cu}$  (64.9278 amu).  
What are the percent abundances of the isotopes?

\* don't have to know how to do \*

If you are just curious about the  
Answers for 2+3, e-mail me. This  
will NOT be on your test! ☆

3. The atomic mass of lithium is 6.94, the naturally occurring isotopes are  $^6\text{Li}$  = 6.015121 amu, and  $^7\text{Li}$  = 7.016003 amu. Determine the percent abundance of each isotope.

\* don't have to know how to do \*