

Name: \_\_\_\_\_

Per: \_\_\_\_\_

**Unit 4C Hd 5 Isotope Worksheet** (Chem)

***SHOW ALL WORK!!!!***

1. Verify that the atomic mass of magnesium is 24.31 amu, given the following information:  
 $^{24}\text{Mg}$ , mass = 23.985 amu; percent abundance = 78.99%  
 $^{25}\text{Mg}$ , mass = 24.986 amu; percent abundance = 10.00%  
 $^{26}\text{Mg}$ , mass = 25.983 amu; percent abundance = 11.01%
  
2. A student looked up the naturally occurring isotopes of bromine and found the following information: 50.54% of the naturally occurring isotopes of bromine have an atomic mass of 78.92 amu while 49.46% of the naturally occurring isotopes of bromine have an atomic mass of 80.92 amu. Calculate the average atomic mass of bromine, showing all work:
  
3. Hydrogen has 2 isotopes, Hydrogen-1 (99.985%) and Hydrogen-2 (.015%) otherwise know as Deuterium. What is the average atomic mass of Hydrogen?
  
4. A certain element X has four isotopes.
  - \* 95.0% of X has a mass of 31.972 amu.
  - \* 0.760% of X has a mass of 32.971 amu.
  - \* 4.22% of X has a mass of 33.968 amu.
  - \* 0.0140% of X has a mass of 35.967 amu.

What is the atomic mass of element X?

5. Strontium has four stable isotopes, Strontium-84 has a very low natural abundance, but  $^{86}\text{Sr}$ ,  $^{87}\text{Sr}$ , and  $^{88}\text{Sr}$  are all reasonably abundant. Which of these more abundant isotopes predominates? (Hint: look at your periodic table, no math required)

