LAD C4 (pg 1 of 1) Pennies as a Model of Isotopes

Name_____

We will use pennies to represent an imaginary element named "coinium". From the weighings made as a class demo, you have just learned that coinium exists as two isotopes.

1. What are the individual masses of each isotope?

2. What is it that is actually causing the two different masses of these "isotopes" of pennies?

Procedure

- Pick up your random sample of coinium - DO NOT OPEN THE CONTAINER.

3. Determine the total average mass of element coinium in your container. (The mass of the empty container is listed on the outside of the container − subtract the container from the mass measured and then divide the mass of the pennies by 10 - since there are 10 pennies in the container.)

4. Now calculate the percentage of each isotope. Use your knowledge of the masses of the individual isotopes from question#1 to compute the percentage of each isotope. Round your calculation to the nearest 10%. Show your algebraic work in the space below. Rounding your percentage to the nearest 10% (since there at 10 pennies in the container and no partial pennies.) will indicate the number of each type of isotope in the container.

5. Open the container and count the number of each of the two isotopes. Was your calculation correct?

6. What factors might cause your percent abundance to have error (not exactly at a 10% interval) ?

7. Repeat at least one more trial using a different film canister. Show your algebra work in the space below.