Name _____

Atomic Mass of Elements

1. Naturally occurring chlorine that is put in pools is 75.53 percent ^{35}Cl (mass = 34.969 amu) and 24.47 percent ^{37}Cl (mass = 36.966 amu). Calculate the average atomic mass of chlorine.

2. Titanium has five common isotopes: ^{46}Ti (8.00%, 45.983 amu), ^{47}Ti (7.80%, 46.988 amu), ^{48}Ti (73.4%, 47.910 amu), ^{49}Ti (5.50%, 48.923 amu), ^{50}Ti (5.30%, 49.942 amu). What is the average atomic mass of titanium?

3. A certain element exists as three different isotopes, 24.1% of the element have a mass of 75.23 amu, 48.7% have a mass of 74.61 amu, and 22.2% have a mass of 75.20 amu.
a. What is the average atomic mass of this element?

b. Use your periodic table to determine which element this is.

4. Calcium has three different isotopes. One isotope has a mass of 35.00 amu; another isotope has a mass of 41.00 amu; and another isotope has a mass of 40.00 amu. Considering your periodic table, which isotope is the most abundant of the three*? (no math required)*

5. Silver has two naturally occurring isotopes (Ag-107 and Ag-109).
a. Use the periodic table to find atomic mass of silver
b. If the natural abundance of Ag-107 is 51.84% , what is the natural abundance of Ag-109?
c. If the mass of Ag-107 is 106.905 amu, what is the mass of Ag-109?

6. Copper has two naturally occurring isotopes. Copper-63 has a mass of 62.939 amu, and an abundance of 69.17%. Use the atomic weight of copper to determine the mass of the other copper isotope.