BLM – Understanding Isotopes

Name: _____ Date: _____ Class: _____

Introduction to Isotopes

1. Explain the following terms in your own words.

   Atomic number: _____

   _____

   Atomic mass: _____

   _____

   Mass number: _____

   _____

   Isotope: _____

   _____

2. Calculate the number of neutrons in the two stable isotopes of chlorine.

   Chlorine-35 (Atomic number 17) mass number = _____ # protons _____ # neutrons _____

   Calculation for neutrons: _____

   Chlorine-37 (Atomic number 17) mass number = _____ # protons _____ # neutrons _____

   Calculation for neutrons: _____

3. If the mass of each proton is 1 unit and the mass of each neutron is 1 unit, why do all of the atomic masses on the periodic table include decimal points instead of just whole numbers?

   _____

   _____

4. In any given sample of chlorine there will be roughly 75% of chlorine atoms that are chlorine-35 and only 25% of chlorine atoms that are chlorine-37 (these are the only two stable isotopes of chlorine). What would be the weighted average atomic mass for chlorine? Show your work: