**Periodic Tables out in front of you!!**

**Isotopes Notes**

The element chlorine, Cl, exists as 2 isotopes Cl-35 and Cl-37.

The atomic number of Cl is \_\_\_\_\_\_\_\_\_\_\_.

The average atomic mass of chlorine is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

If you had a bag of chlorine atoms and took them out one by one and massed them, you would find some of the Cl atoms had a mass of 35 and some had a mass of 37.

Isotopes are atoms of the same element that contain different numbers of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw Bohr Diagrams of the 2 isotopes:

35Cl 37Cl

What is the same about these 2 atoms?

* ­­­­­­­­­­­­­­­­­­

What is the only thing that is different about these 2 atoms? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now, if you had a bag of 100 Cl atoms you would find that approximately 75 % of the Cl atoms would have a mass of 35 amu (atomic mass units) and approximately 25 % of the Cl atoms would have a mass of 37 amu (aka μ or mus).

Just like your term mark in science is a weighted average so is the average atomic mass that appears on the periodic table.

**If 75 % of Cl atoms weigh 35 amu and 25 % of the Cl atoms weigh 37 amu, what is the average atomic mass of Cl?**

Show your math including units: