**Name: Session:**

**Programming II**

**Lab Exercise 4/13/2023**

Amino acids are composed of atoms of oxygen, carbon, nitrogen, sulfur, and hydrogen, whose atomic weights are given in the table below.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **Element** | **Atomic Weight** | | Oxygen | 15.9994 | | Carbon | 12.011 | | Nitrogen | 14.00674 | | Sulfur | 32.066 | | Hydrogen | 1.00794 | |

The purpose of your program is to compute the difference in molecular weight of any two amino acids, given their molecular composition.

INPUT REQUIREMENTS  
The number of atoms of each of the five elements above contained in two amino acids (a whole number).

OUTPUT REQUIREMENTS   
The molecular weight of each amino acid.  
The difference between the two weights.  
Format all numbers to two decimal places.

For the first amino acid, enter the number of atoms of carbon, hydrogen, nitrogen, oxygen, and sulfur (in that order): 6 13 1 2 0  
The molecular weight of the first amino acid is 131.17

For the second amino acid, enter the number of atoms of carbon, hydrogen, nitrogen, oxygen, and sulfur (in that order): 4 9 1 3 0

The molecular weight of the second amino acid is 119.12  
The difference in weights is 12.05

**Once your program is working with direct user input, modify it to read your data from a disk file.**

**Once your programs are working, submit your source code and a sample output.**