Overview:
In this practical we were asked to create two programs; one that summed the prices of every item in a list of items that were necessary for a Birthday party and outputted the total, and one that did the same but also outputted the total costs of certain categories the items could be sorted into. I completed all the parts of the assignment.

Design:
I thought it would be better to store the number of items and their prices in variables as that way if I wanted to change these numbers later, I would not have to go through the whole program and change every instance of them individually. I used int to declare the variables storing the number of items as they must be whole numbers and double for the variables storing the prices as they are not. I also decided to slightly misrepresent the purpose of the variables for the sake of brevity and clarity in the code. For example, I wrote *"noOfJellies"* instead of *"noOfPlatesOfJelliesAndIceCream"*, which does not have the same exact meaning, but which improves the readability of the code without detracting too much from creating a meaningful variable name.

Testing:
To test my program, I used the auto-checker provided in the W03Practical.zip file which tested the output of my sum against a pre-set value with which it should align. I also tested the W03PracticalEx.java file by working out the values manually on a calculator.

Evaluation:
My program successfully outputted the correct value for the total cost of the party using the variables suggested in part 1 and also outputs values for the subtotals for the different categories the items fall under, as requested in part 4. I also commented my code providing reasons for decisions that were made during the process (part 3).

Conclusion:
The auto-checker confirmed that my program produced the correct output for the sum in part 2, but as there was no auto-checker to test part 4, I do not know whether the outputs are correct. The code runs without errors and the values line up with values that I calculated independently on a calculator, so I am relatively sure that they are. I also implemented a formatting system to ensure the output values of the W03PracticalEx.java file would be to two decimal places as is the case with actual money. I found it quite difficult to understand how exactly the formatting works, I found it on *https://stackoverflow.com/questions/153724/how-to-round-a-number-to-n-decimal-places-in-java* on 2020/09/27 at 17:25. Given more time I would like to understand the formatting system that I used more thoroughly so that I could know if it rounds values correctly, and also potentially implement an input system for the user so that they can choose the quantities of items that they would like.