PFP - Labwork 01

Q1 (2.5 marks). Write a program that performs the following tasks:

1. Calculate the multiplication and sum of two numbers

Given 1:

```
number1 = 20
number2 = 30
```

Expected Output:

```
The result is 600
```

Given 2:

```
number1 = 40
number2 = 30
```

Expected Output:

```
The result is 70
```

2. Print the sum of the current number and the previous number
   Write a program to iterate the first 10 numbers and in each iteration, print the sum of the current and previous number.

Expected Output:

```
Printing current and previous number sum in a range(10)
Current Number 0 Previous Number  0  Sum:  0
Current Number 1 Previous Number  0  Sum:  1
Current Number 2 Previous Number  1  Sum:  3
Current Number 3 Previous Number  2  Sum:  5
Current Number 4 Previous Number  3  Sum:  7
Current Number 5 Previous Number  4  Sum:  9
Current Number 6 Previous Number  5  Sum:  11
Current Number 7 Previous Number  6  Sum:  13
Current Number 8 Previous Number  7  Sum:  15
Current Number 9 Previous Number  8  Sum:  17
```

3. Display three string “Name”, “Is”, “James” as “Name**Is**James”
   Use the print() function to format the given words in the mentioned format. Display the ** separator between each string.

Expected Output:

For example: `print('Name', 'Is', 'James')` will display `Name**Is**James`

Q2 (2.5 marks). Write a program to accept 3 real numbers a, b, c, then:

1. Convert Decimal number to octal using print() output formatting

Given:

```
num = 8
```

Expected Output:

```
The octal number of decimal number 8 is 10
```

2. Display float number with 2 decimal places using print()

Given:

```
num = 458.541315
```

Expected Output:

```
458.54
```

Q3 (2.5 marks). Write a program that performs the following tasks:

4. Input 4 real numbers a, b, c and x.
5. Calculate $S1 = ax^2 + bx + c$.
6. Calculate $S2 = \sqrt{b^2 - 4ac}$ if $b^2 - 4ac > 0$, otherwise $S2 = 0$
7. Re-input a, b and c. Check whether a, b and c are sides of a triangle or not.
8. If a, b, c are sides of a triangle, then calculate its perimeter and area, otherwise display on the screen a message "a, b, c are not side of a triangle". The area is calculated by the Heron formula below:

$$S1 = \sqrt{p(p-a)(p-b)(p-c)}, \text{ where } p = \frac{(a+b+c)}{2}$$

Q4 (2.5 marks). Write a program to accept 3 real numbers a, b, c, then:

3. Display the maximum and minimum values among them.
4. Arrange them in ascending order, i.e. $a \leq b \leq c$.