CSE 2194: Supervised Machine Learning
Programming Assignment-I
(Python Basics)

Question 1:

Evaluate the following expressions involving arithmetic operators:

a. -7*20+8/16*2+54

b. 7**2//9%3

c. (7-4*2)*10-25*8//5

d. 5%10+10-25*8//5

Question 2:

Evaluate the following expressions involving relational and logical operators:

a. 'hi' > 'hello' and 'bye' < 'Bye'

b. 'hi' > 'hello' or 'bye' < 'Bye'

c. 7 > 8 or 5 < 6 and 'I am fine' > 'I am not fine'

d. 10 !=9 and 29 >= 29

e. 10 !=9 and 29 >= 29 and 'hi' > 'hello' or 'bye' < 'Bye' and 7 <= 2.5

Question 3:

Write an assignment statement using a single conditional expression for the following if-else code:

```
if marks >= 70:
        remarks = 'good'
else:
        remarks = 'average'
```

Question 4:

Write a Python program to find the sum of all elements in a list.

Question 5:

Write a Python program that takes two numbers as input parameters and returns their greatest common divisor.

Question 6:

Write a Python program to find the maximum of three numbers using a nested function.

Question 7:

Write a Python program to find the maximum element in a list. (Without using max inbuilt function)

Question 8:

An integer n is divisible by 9 if the sum of its digits is divisible by 9. Use this concept in your program to determine whether or not the number is divisible by 9. Use while loop.

Test it on the following number:
n = 154368
Hint: Use the % operator to get each digit, then use the // operator to remove the digit.

Sample run 1: Enter a number: 154368 The number 154368 is divisible by 9.

Question 9:

Write a Python program that reads an integer between 0 and 1000 and adds all the digits in the integer. For example, if an integer is 749, the sum of all its digits is 20.
Hint: Use the % operator to extract digits and the // operator to remove the extracted digit.
For instance, 749 % 10 = 9 and 749 / 10 = 74.
Here is a sample run: Enter a number between 0 and 1000: 999 The sum of the digits is 27

Question 10:

Write a Python program to enter the first number and second number. Display the prime number between the first and second numbers.
Example:
Enter the first number: 5
Enter the second number: 15
Expected output: 5 7 11 13

Home Assignment:

Question 1:

Write a Python program that takes a point's x – y coordinates in the Cartesian plane and prints a message telling either an axis on which the point lies or the quadrant in which it is found.

Here is the sample output:

(-1.0, -2.5) is in quadrant III

(0.0, 4.8) is on the y-axis.

Question 2:

Write a Python program to check if a number is a perfect number or not.
(Hints: A number N is called a perfect number if the sum of factors except N as a factor equals the number N.)