Post-Lab 04 Tasks

Instructions:

- The post-lab tasks are to be submitted at bcsf19m002@pucit.edu.pk. The submission deadline is Monday, 11: 59 pm, 15-10-2023.
- You will do Q1 on a word document. Copy the table and fill it in with your answers.
- For the post-lab submissions, you must use your pucit email ids. You should zip all of your work (.c files only(not .exe) and word document for Q1) into a folder named with your Roll No. and Lab No. e.g., BITF22M001_L04.
- The subject of the email should be 'Lab 04 Submission'.
- All of your code must be **properly indented**.
- You must strictly follow the instructions. You will be penalized for not following the instructions.
- Any cheating or plagiarism case caught would be straight away 0.
- 1. Dry Run the following program and fill up the trace table:

```
// for# 1
for (int x = 2; x <= 13; x += 2) {
    printf("%d, ", x);
}

// for# 2
for (int x = 5; x <= 22; x += 7) {
    printf("%d, ", x);
}

// for# 3
for (int x = 3; x <= 15; x += 3) {
    printf("%d, ", x);
}

// for# 4
for (int x = 1; x <= 5; x += 7) {
    printf("%d, ", x);
}

// for# 5
for (int x = 12; x >= 2; x -= 3) {
    printf("%d, ", x);
}
```

	Loop#	No. of times the loop runs	Output
1			
2			
3			
4			
5			

('-=' works just like '+='. For example, x+=3 means x=x+3 and x-=3 means x=x-3. Similarly '*=' and '/=' operators also exist.)

- 2. Write a program that takes in a number from the user and calculates the sum of digits of the number. For example, if the user enters 1217, the program should print 11 (1+2+1+7). Hint: the logic is similar to reversed number logic.
- 3. Create a C program that:
 - Takes input of two integers.
 - Finds the sum of all numbers which are dividends of 4 and 16, between these two integers.
 - Print an appropriate message if no such dividend (number) exists in the range.
 - Display the Sum of all divisible on the Console as shown in figure.

```
Microsoft Visual Studio Debug Console

Enter first Integer: 15
Enter second Integer: 85
16 + 32 + 48 + 64 + 80 = 240
```

- 4. Create a Console based calculator which:
 - Displays the menu on Console and takes an input from user as follows:

```
Microsoft Visual Studio Debug Console
Select an operation to perform the calculation in C Calculator:
1 Addition
                       2 Subtraction
3 Multiplication
                    4 Division
5 Square
                       6 Square Root
7 Exit
Please, Make a choice 1
You chose: Addition
Enter First Number: 2
Enter Second Number: 3
Addition of two numbers is: 5.00
******************
 Select an operation to perform the calculation in C Calculator:
               2 Subtract:
n 4 Division
                      2 Subtraction
1 Addition
3 Multiplication
5 Square
                       6 Square Root
7 Exit
Please, Make a choice 7
You chose: Exit
```

(Use #include<math.h> header file in order to implement power and sqrt functions. Example Usage: sqrt(num) and pow(num1, num2)) (Hint: 7 is the sentinel value in this question)