

ASSIGNMENT 1

Q1. Write a code to print the following pattern:

Input - 5

```
Output - 1      11      11
          12      2112    2112
          123     321123   321123
          1234    43211234  43211234
          1234554321123455432112345
```

Q2. Write a code to make a fully functional calculator which can perform addition, subtraction, multiplication, division, mod, remainder, trigonometric and exponential calculations (like $\ln X + \sin X$, as provided by user).

Note: You must have to make functions for different operators.

Example: Input -

Operators = ln,+,sin (There can be 'n' number of operators)

Values = 1 (X=1) (There can be 'n' number of values)

Output -

Output should be the final value of given expression.

Q3. Write a C++ program to perform basic statistical analysis on a set of exam scores stored in an array. Your program should accomplish the following tasks:

1. Declare an array named examScores to store 10 integer exam scores.
2. Prompt the user to input 10 exam scores into the array.
3. Calculate and display the following statistics:
 - Average exam score
 - Highest exam score
 - Lowest exam score
 - Number of exam scores above the average
 - Number of exam scores below the average