**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Advanced Programming in C++**

**Lab Exercise 5.24.2023**

1. Write a program to check whether a number can be expressed as sum of two prime numbers.    
   Test Data :  
    Input a positive integer: 16  
   Expected Output :  
    16 = 3 + 13  
    16 = 5 + 11

16 = 13 + 3  
 16 = 11 + 5

1. Write a program to display the number in reverse order.

Test Data :  
 Input a number: 12345  
Expected Output :  
 The number in reverse order is : 54321

1. Write a program to find out the sum of in Arithmetic Progression series.   
   Test Data :  
    Input the starting number of the A.P. series: 1  
    Input the number of items for the A.P. series: 10  
    Input the common difference of A.P. series: 4  
   Expected Output :  
    The Sum of the A.P. series are :  
    1 + 5 + 9 + 13 + 17 + 21 + 25 + 29 + 33 + 37 = 190
2. Write a program to find the sum of Geometric Progression series.   
   Test Data :  
    Input the first number of the G.P. series: 1  
    Input the number or terms in the G.P. series: 5  
    Input the common ratio of G.P. series: 2  
   Expected Output :  
    The numbers for the G.P. series:  
    1 2 4 8 16  
    The sum of the G.P. series : 31
3. Write a C++ program to check a given array of integers and return true if 5 appears 5 times. There are no 5 next to each other.

Sample Input:  
{ 3, 5, 1, 5, 3, 5, 7, 5, 1, 5 }  
{ 3, 5, 5, 5, 5, 5, 5 }  
{ 3, 5, 2, 5, 4, 5, 7, 5, 8, 5 }  
{ 2, 4, 5, 5, 5, 5 }  
{ 3, 5, 5, 5, 5, 5, 5, 5, 5, 5 }  
Expected Output :

True

False

True

False

False