**Problem 1:** Write a C++ program that Calculates the Product of two numbers WITHOUT using the \* operator. Your program must also do input validation and should display an error message in case of negative numbers being input.

**Sample Output:**

Number1: 3

Number2: 5

Sample Output: Product of 3 and 5 is 15.

**Problem 2**: Write a program that prints the numbers from 1 to 100. But for multiples of three print “Fizz” instead of the number and for the multiples of five print “Buzz”. For numbers which are multiples of both three and five print “FizzBuzz”.

Output will be : 1 2 Fizz 4 Buzz Fizz 7 8 Fizz Buzz 11 Fizz 13 14 FizzBuzz………..

**Problem 3:** Write a program in C++ to find the Greatest Common Divisor (GCD) of two numbers. Your program must do input validation and should display an error message accordingly.

**Sample Output:**

Input the first number: 25

Input the second number: 15

The Greatest Common Divisor is: 5

**Problem 4:** Write a program in C++ to display the number in reverse order. Your program must do input validation and should display an error message accordingly. You are required to use For loop only.

**Sample Output:**

Input a number: 12345

The number in reverse order is : 54321

**Problem 5:** Write a program for Counting Digits and displaying their total count at the end of the program. We want to read a non‐negative integer only.

**Sample Output:**

8713105 - 7 digits

156 - 3 digits

8 - 1 digit

1. - 1 digit (note this special case)

**Problem 6:** Write a program in C++ to display the n terms of harmonic series and their sum.

1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n terms. Your program should display both the series and the sum as the sample below.

**Sample Output:**

Input number of terms: 5

1/1 + 1/2 + 1/3 + 1/4 + 1/5

The sum of the series up to 5 terms: 2.28333

**Problem 7:**

Write a program in C++ to calculate the sum of the series (1\*1) + (2\*2) + (3\*3) + (4\*4) + (5\*5) + ... + (n\*n). Your program should display both the series and the sum as the sample below.

**Sample Output:**

Input the value for nth term: 5

1\*1 = 1

2\*2 = 4

3\*3 = 9

4\*4 = 16

5\*5 = 25

The sum of the above series is: 55

Good Luck

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