Problems based on Recursion - 4

Assignment Questions

PW SKILLS

Q1 - Given a number n, print the following pattern without using any loop. (Easy)

n, n-5, n-10, ..., 0, 5, 10, ..., n-5, n
There should be 0 or at most one occurrence of negative number in the series.

Sample Input: n = 16
Sample Output: 16, 11, 6, 1, -4, 1, 6, 11, 16

Sample Input: n = 10
Sample Output: 10, 5, 0, 5, 10

Q2 - Find m-th summation of first n natural numbers where m-th summation of first n natural numbers is defined as following: (Medium)

If m > 1: SUM(n, m) = SUM(SUM(n, m - 1), 1)
Else :SUM(n, 1) = Sum of first n natural numbers.

Sample Input: n = 3, m = 2
Sample Output: SUM(3, 2) = 21
Explanation : SUM(3, 2)
= SUM(SUM(3, 1), 1)
= SUM(6, 1)
= 21

Sample Input: n = 4, m = 1
Sample Output: SUM(4, 1) = 10

Q3 - Given a number n which denotes the number of variables in the equation and a val which denotes the sum of these variables, count the number of such non-negative integral solutions that are possible. (Medium)

Sample Input: n=5 val=1
Sample Output: 5

Explanation: The possible solutions are
0,0,0,0,1
0,1,0,0,0
0,0,0,1,0
0,0,1,0,0
0,0,0,0,1