// C++ program for coin change problem

// using recursion

#include <bits/stdc++.h>

using namespace std;

// Returns the count of ways we can

// sum coins[0...n-1] coins to get sum "sum"

int countRecur(vector<int>& coins, int n, int sum) {

// If sum is 0 then there is 1 solution

// (do not include any coin)

if (sum == 0) return 1;

// 0 ways in the following two cases

if (sum < 0 || n == 0) return 0;

// count is sum of solutions (i)

// including coins[n-1] (ii) excluding coins[n-1]

return countRecur(coins, n, sum - coins[n - 1]) +

countRecur(coins, n - 1, sum);

}

int count(vector<int> &coins, int sum) {

return countRecur(coins, coins.size(), sum);

}

int main() {

vector<int> coins = {1, 2, 3};

int sum = 5;

cout << count(coins, sum);

return 0;

}