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**Started on** Monday, 6 October 2025, 8:45 PM

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**State** Finished

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**Completed on** Monday, 6 October 2025, 8:49 PM

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**Time taken** 3 mins 16 secs

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**Grade** 10.00 out of 10.00 (100%)

**Question 1** | Correct Mark 10.00 out of 10.00**Playing with Numbers:**

Ram and Sita are playing with numbers by giving puzzles to each other. Now it was Ram term, so he gave Sita a positive integer 'n' and two numbers 1 and 3. He asked her to find the possible ways by which the number n can be represented using 1 and 3. Write any efficient algorithm to find the possible ways.

**Example 1:****Input:** 6**Output:** 6**Explanation:** There are 6 ways to 6 represent number with 1 and 3

1+1+1+1+1+1

3+3

1+1+1+3

1+1+3+1

1+3+1+1

3+1+1+1

**Input Format**

First Line contains the number n

**Output Format****Print: The number of possible ways 'n' can be represented using 1 and 3**

Sample Input

6

Sample Output

6

**Answer:** (penalty regime: 0 %)

```

1  #include<stdio.h>
2  long long countways(int n)
3  {
4      long long dp[n+1];
5      dp[0]=1;
6      for(int i=1;i<=n;i++)
7      {
8          dp[i]=0;
9          if(i-1>=0)
10             dp[i]+=dp[i-1];
11             if(i-3>=0)
12                 dp[i]+=dp[i-3];
13     }
14     return dp[n];
15 }
16 int main(){
17     int n;
18     scanf("%d",&n);
19     if(n<0){
20         return 1;
21     }
22     long long ways=countways(n);
23     printf("%lld",ways);
24     return 0;
25 }
```

|   | Input | Expected          | Got               |   |
|---|-------|-------------------|-------------------|---|
| ✓ | 6     | 6                 | 6                 | ✓ |
| ✓ | 25    | 8641              | 8641              | ✓ |
| ✓ | 100   | 24382819596721629 | 24382819596721629 | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 10.00/10.00.