# Problem 3183: The Number of Ways to Make the Sum

## Problem Information

**Difficulty:** Medium
**Acceptance Rate:** 51.31%
**Paid Only:** Yes
**Tags:** Array, Dynamic Programming

## Problem Description

You have an **infinite** number of coins with values 1, 2, and 6, and **only** 2 coins with value 4.

Given an integer `n`, return the number of ways to make the sum of `n` with the coins you have.

Since the answer may be very large, return it **modulo** `109 + 7`.

**Note** that the order of the coins doesn't matter and `[2, 2, 3]` is the same as `[2, 3, 2]`.

**Example 1:**

**Input:** n = 4

**Output:** 4

**Explanation:**

Here are the four combinations: `[1, 1, 1, 1]`, `[1, 1, 2]`, `[2, 2]`, `[4]`.

**Example 2:**

**Input:** n = 12

**Output:** 22

**Explanation:**

Note that `[4, 4, 4]` is **not** a valid combination since we cannot use 4 three times.

**Example 3:**

**Input:** n = 5

**Output:** 4

**Explanation:**

Here are the four combinations: `[1, 1, 1, 1, 1]`, `[1, 1, 1, 2]`, `[1, 2, 2]`, `[1, 4]`.

**Constraints:**

* `1 <= n <= 105`

## Code Snippets

**C++:**

```cpp
class Solution {
public:
    int numberOfWays(int n) {

    }
};
```

**Java:**

```java
class Solution {
    public int numberOfWays(int n) {

    }
}
```

**Python3:**

```python
class Solution:
    def numberOfWays(self, n: int) -> int:
```