# 1398. Number of Ways to Stay in the Same Place After Some Steps

# Difficulty : Hard

https://leetcode.com/problems/number-of-ways-to-stay-in-the-same-place-after-some-steps

You have a pointer at index `0` in an array of size `arrLen`. At each step, you can move 1 position to the left, 1 position to the right in the array, or stay in the same place (The pointer should not be placed outside the array at any time).

Given two integers `steps` and `arrLen`, return the number of ways such that your pointer is still at index `0` after **exactly** `steps` steps. Since the answer may be too large, return it **modulo** $10^9 + 7$.

**Example 1:**

```
Input: steps = 3, arrLen = 2
Output: 4
Explanation: There are 4 differents ways to stay at index 0 after 3 steps.
Right, Left, Stay
Stay, Right, Left
Right, Stay, Left
Stay, Stay, Stay
```

**Example 2:**

```
Input: steps = 2, arrLen = 4
Output: 2
Explanation: There are 2 differents ways to stay at index 0 after 2 steps
Right, Left
Stay, Stay
```

**Example 3:**

```
Input: steps = 4, arrLen = 2
Output: 8
```

**Constraints:**

- `1 <= steps <= 500`
- `1 <= arrLen <= ` $10^6$