3339. Find the Number of K-Even Arrays Premium

Medium Topics Hint

You are given three integers `n`, `m`, and `k`.

An array `arr` is called **k-even** if there are **exactly** `k` indices such that, for each of these indices `i` (`0 <= i < n - 1`):

- `(arr[i] * arr[i + 1]) - arr[i] - arr[i + 1]` is *even*.

Return the number of possible **k-even** arrays of size `n` where all elements are in the range `[1, m]`.

Since the answer may be very large, return it **modulo** $10^9 + 7$.

Example 1:

> **Input:** `n = 3, m = 4, k = 2`
>
> **Output:** 8
>
> **Explanation:**
>
> The 8 possible 2-even arrays are:
>
> - `[2, 2, 2]`
> - `[2, 2, 4]`
> - `[2, 4, 2]`
> - `[2, 4, 4]`
> - `[4, 2, 2]`
> - `[4, 2, 4]`
> - `[4, 4, 2]`
> - `[4, 4, 4]`

Example 2:

> **Input:** `n = 5, m = 1, k = 0`
>
> **Output:** 1
>
> **Explanation:**
>
> The only 0-even array is `[1, 1, 1, 1, 1]`.

Example 3:

> **Input:** `n = 7, m = 7, k = 5`
>
> **Output:** 5832

Constraints:

- `1 <= n <= 750`
- `0 <= k <= n - 1`
- `1 <= m <= 1000`

Seen this question in a real interview before? 1/5

Yes No

Accepted **264** | Submissions **438** | Acceptance Rate **60.3%**

Topics

Dynamic Programming

Hint 1

Use dynamic programming.

Hint 2

Store whether the last element was even or odd.

Similar Questions

Sort Array By Parity II Easy

Discussion (1)