

1802. Maximum Value at a Given Index in a Bounded Array

Description

You are given three positive integers: `n`, `index`, and `maxSum`. You want to construct an array `nums` (0-indexed) that satisfies the following conditions:

- `nums.length == n`
- `nums[i]` is a **positive** integer where $0 \leq i < n$.
- `abs(nums[i] - nums[i+1]) <= 1` where $0 \leq i < n-1$.
- The sum of all the elements of `nums` does not exceed `maxSum`.
- `nums[index]` is **maximized**.

Return `nums[index]` of the constructed array.

Note that `abs(x)` equals `x` if $x \geq 0$, and `-x` otherwise.

Example 1:

Input: `n = 4, index = 2, maxSum = 6`

Output: 2

Explanation: `nums = [1, 2, 2, 1]` is one array that satisfies all the conditions.

There are no arrays that satisfy all the conditions and have `nums[2] == 3`, so 2 is the maximum `nums[2]`.

Example 2:

Input: `n = 6, index = 1, maxSum = 10`

Output: 3

Constraints:

- $1 \leq n \leq \text{maxSum} \leq 10^9$
- $0 \leq \text{index} < n$

