Problem 1658: Minimum Operations to Reduce X to Zero

Problem Information

Difficulty: Medium
Acceptance Rate: 40.29%
Paid Only: No
Tags: Array, Hash Table, Binary Search, Sliding Window, Prefix Sum

Problem Description

You are given an integer array `nums` and an integer `x`. In one operation, you can either remove the leftmost or the rightmost element from the array `nums` and subtract its value from `x`. Note that this **modifies** the array for future operations.

Return _the**minimum number** of operations to reduce _`x` _to**exactly**_ `0` _if it is possible_ _, otherwise, return_`-1`.

Example 1:

Input: nums = [1,1,4,2,3], x = 5 **Output:** 2 **Explanation:** The optimal solution is to remove the last two elements to reduce x to zero.

Example 2:

Input: nums = [5,6,7,8,9], x = 4 **Output:** -1

Example 3:

Input: nums = [3,2,20,1,1,3], x = 10 **Output:** 5 **Explanation:** The optimal solution is to remove the last three elements and the first two elements (5 operations in total) to reduce x to zero.

Constraints:

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 104` * `1 <= x <= 109`

Code Snippets

C++:

```
class Solution {
public:
int minOperations(vector<int>& nums, int x) {

}
};
```

Java:

```
class Solution {
public int minOperations(int[] nums, int x) {

}
}
```

Python3:

```
class Solution:
def minOperations(self, nums: List[int], x: int) -> int:
```