*(This problem is an* ***interactive problem****.)*

You may recall that an array arr is a **mountain array** if and only if:

* arr.length >= 3
* There exists some i with 0 < i < arr.length - 1 such that:
  + arr[0] < arr[1] < ... < arr[i - 1] < arr[i]
  + arr[i] > arr[i + 1] > ... > arr[arr.length - 1]

Given a mountain array mountainArr, return the **minimum** index such that mountainArr.get(index) == target. If such an index does not exist, return -1.

**You cannot access the mountain array directly.** You may only access the array using a MountainArray interface:

* MountainArray.get(k) returns the element of the array at index k (0-indexed).
* MountainArray.length() returns the length of the array.

Submissions making more than 100 calls to MountainArray.get will be judged *Wrong Answer*. Also, any solutions that attempt to circumvent the judge will result in disqualification.

**Example 1:**

Input: array = [1,2,3,4,5,3,1], target = 3  
Output: 2  
Explanation: 3 exists in the array, at index=2 and index=5. Return the minimum index, which is 2.

**Example 2:**

Input: array = [0,1,2,4,2,1], target = 3  
Output: -1  
Explanation: 3 does not exist in the array, so we return -1.

**Constraints:**

* 3 <= mountain\_arr.length() <= 104
* 0 <= target <= 109
* 0 <= mountain\_arr.get(index) <= 109