Escape Room

In a puzzle escape game, you find yourself trapped in a locked room with a keyhole. Inside the room, there is only a table, a piece of paper, a pen, and scattered numbers and characters written on the walls. On the wall, you discover an important clue to escape, which is:
3 6 3 1 2 5
The password is 4
To escape, you need to write the password on the piece of paper. As a super sharp detective, you immediately recognize the pattern of the characters. The first line contains only one number N, and the second line contains $2n - 1$ positive integers. The password is the smallest number that, when added to the list, allows for at least one way to pair the numbers so that their sums are equal.
In the example above, you can see that $[6, 3, 1, 2, 5]$ can be split into $[6, 1], [5, 2], [3, x]$. You need to fill in the number 4 so that $6 + 1 = 5 + 2 = 3 + 4$. In case you cannot find such a number, write -1 on the piece of paper, and you will be set free.
There is only one test case for this problem, but it is not easy to submit that test case!

Input Format:
Contains $2k + 1$ *lines, in which:*
The first line is the total number of test cases K $(1 \leq K \leq 70)$
The next line contains only one number N $(1 \leq N \leq 3 * 10^5)$
The next line contains $A[1], A[2], \ldots A[N]$ $(1 \leq A_i \leq 3 * 10^9)$
…
The next line contains only one number N $(1 \leq N \leq 3 * 10^5)$
The next line contains $A[1], A[2], \ldots A[N]$ $(1 \leq A_i \leq 3 * 10^9)$
Output Format
"Case #i : Result"

Example:
Input:
7
3
6 3 1 2 5
2
7 7 7
1
1
3
1 9 1 1 4
4
1 9 1 1 4 9 9
4
1 9 10 1 4 6 9
3
1000000000 2 4 999999994

Output:
Case #1: 4
Case #2: 7
Case #3: 1
Case #4: -1
Case #5: 6
Case #6: -1
Case #7: 1000000002

- ***Write "Case #i: Result".***
- *In "Case 3", when the input is "1", the correct output is "1". This is because A[i] must be greater than or equal to 1. "1" is the minimum number you can find, not "0", and if you can't find Result, Write "Case #i: -1"*