G. Even Hate Odd

time limit per test: 5 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given an array a of n integers. You have two kinds of operations

1. increment any element in a (increase it by one).
2. decrement any element in a (decrease it by one).

What is the minimum number of operations to make the number of even elements equal to the number of odd elements, or detect that this is impossible?

Input
The first line contains a single integer $t(1 \le t \le 10)$ the number of test cases.

The first line of each test case contains an integer $n(1 \le n \le 10^5)$ the number of elements in the array a .

The second line of each test case contains n integers $a_i(1 \le a_i \le 10^5)$ the elements of the array a.

Output
For each test case, print the minimum number of operations required, or -1 if it's impossible

Example

input	Copy
3 4 1 2 3 4 4 1 1 1 1 3 1 2 3	

output	Copy
0 2 -1	

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→ Group Contests

- Sheet #10 (General Hard)
- Sheet #9 (General medium)
- Sheet #8 (General easy)
- Sheet #7 (Recursion)
- Sheet #6 (Math - Geometry)
- Sheet #5 (Functions)
- Sheet #4 (Strings)
- Contest #3.1
- Sheet #3 (Arrays)
- Contest #2
- Sheet #2 (Loops)
- Contest #1
- Sheet #1 (Data type - Conditions)

Contest #3.1

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.