

Symmetry Shuffle

time limit per test: 2 seconds
memory limit per test: 976.6 megabytes
input: standard input
output: standard output
points: 100 · problem code: symmetryshuffle

You are given an array of integers $a_1, a_2, \dots, a_n$. Your task is to make the array symmetrical with the minimum number of operations.

Definition of a Symmetric Array: An array $b_1, b_2, \dots, b_n$ is considered symmetrical if $b_i = b_{n-i+1}$ for all $1 \leq i \leq n$.

Operations Allowed: Before performing any operations, you may shuffle the elements of the array in any order you like. Then, you can perform the following operation any number of times:

- Choose an index $1 \leq i \leq n$ and increment the value of a_i by 1, i.e., set $a_i = a_i + 1$.

Objective: Determine the minimum number of operations required to make the array symmetrical.

It's guaranteed that you can always make an array symmetrical.

Input Format:

- The first line of the input contains a single integer t ($1 \leq t \leq 10^4$) — the number of test cases.
- The first line of each test case contains a single integer n ($1 \leq n \leq 10^5$) — the number of elements in the array. The sum of n over all sets of input data does not exceed 10^5 .
- The second line of each test case contains n integers $a_1, a_2, \dots, a_n$ ($1 \leq a_i \leq 10^9$) — the elements of the array.

Output Format: For each test case, output the minimum number of operations required to make the array symmetrical.

Examples

Input

```
3
4
1 3 3 1
5
2 3 3 2 1
3
1 2 3
```

Output

```
0
0
1
```

1. An array of 4 elements: 1 3 3 1.
2. An array of 5 elements: 2 2 1 3 3.
3. move 1 to the middle to get 2 1 3 and add 1 to 2 to get 3 1 3

Input

```
4
4
7 1 5 3
7
1 8 2 16 8 16 31
5
11 2 15 7 10
13
2 1 1 3 3 11 12 22 45 777 777 1500 74
```

Output

```
4
1
6
48
```