Mock CCC '20 Contest 2 S4 - Rotational Arrays

Time limit: 0.5s   **Memory limit:** 256M

An array a of N elements can be rotated to the right by taking the last element and moving it to the front. For example, rotating $[1, 2, 3, 4]$ to the right once results in $[4, 1, 2, 3]$.

An array is considered *rotational* if it can be rotated some number of times k to the right, where $1 \leq k < \max(2, N)$, and result in the original array. For example, the array $[1, 1, 1]$ is considered *rotational*.

One *modification* of an array consists of increasing or decreasing an element's value by 1. Given an array a, can you determine the **minimum** number of **modifications** needed in order to convert an array to a *rotational* array?

Input Specification

The first line will contain the integer N $(1 \leq N \leq 10^5)$, the number of elements.

The second line will contain N integers, a_i $(1 \leq a_i \leq 10^9)$, the elements of the array.

Output Specification

Output the **minimum** number of modifications needed to convert a to a *rotational* array.

Subtasks

For 3/15 of the points, $N \leq 10$, $a_i \leq 2$.

For an additional 5/15 of the points, $a_i \leq 2$.

Sample Input

```
4
1 2 2 2
```

Sample Output

```
1
```

Explanation For Sample

We can increase the first element's value to 2, which transforms it into a *rotational* array. This is exactly one modification.