Problem . An Array and Range Additions

Given an array of integers a of length n.

You can modify the array using the *addition operation*. To apply the *addition operation*, you need to perform three sequential actions:

1. Choose any integer x.
2. Choose any subarray $[l; r]$ of the array.
3. Add x to each element of the chosen subarray (perform the assignment operation $a_i \leftarrow (a_i + x)$ for $l \leq i \leq r$).

Find the minimum number of *addition operations* required to make all elements of the array a pairwise distinct.

Input

The first line contains a single integer n ($1 \leq n \leq 2 \cdot 10^5$) — the length of the array.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 10^9$) — the elements of the array.

Output

Output a single integer — the minimum number of *addition operations* required to make all elements of the array a pairwise distinct.

Examples

test	answer
3 1 2 3	0

Note

In the first example, all elements of the array a are pairwise distinct.

In the second example, after applying two *addition operations* with parameters $x = -3$, $l = 1$, $r = 2$ and $x = -1$, $l = 1$, $r = 3$, the array a becomes equal to $[-2, -1, 1, 3, 2]$.

In the third example, after applying two *addition operations* with parameters $x = -3$, $l = 4$, $r = 8$ and $x = -10$, $l = 7$, $r = 9$, the array a becomes equal to $[2, 3, 1, -2, 0, -1, -12, -10, -7]$.

Scoring

1. (9 points): all elements of the array a are equal to 1.
2. (15 points): $1 \leq a_i \leq 2$ for $1 \leq i \leq n$; $a_i \leq a_{i+1}$ for $1 \leq i < n$.
3. (14 points): $n \leq 8$.
4. (17 points): $a_1 = a_n$.
5. (12 points): $n \leq 2000$.
6. (12 points): $1 \leq a_i \leq 100$ for $1 \leq i \leq n$.
7. (21 points): no additional constraints.