Problem D. Odd Subarrays

Time limit	1000 ms
Mem limit	262144 kB

For an array $[b_1, b_2, \ldots, b_m]$ define its number of inversions as the number of pairs (i, j) of integers such that $1 \le i < j \le m$ and $b_i > b_j$. Let's call array b **odd** if its number of inversions is odd.

For example, array $[4, 2, 7]$ is odd, as its number of inversions is 1, while array $[2, 1, 4, 3]$ isn't, as its number of inversions is 2.

You are given a permutation $[p_1, p_2, \ldots, p_n]$ of integers from 1 to n (each of them appears exactly once in the permutation). You want to split it into several consecutive subarrays (maybe just one), so that the number of the **odd** subarrays among them is as large as possible.

What largest number of these subarrays may be **odd**?

Input

The first line of the input contains a single integer t ($1 \le t \le 10^5$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains a single integer n ($1 \le n \le 10^5$) — the size of the permutation.

The second line of each test case contains n integers $p_1, p_2, \ldots, p_n$ ($1 \le p_i \le n$, all p_i are distinct) — the elements of the permutation.

The sum of n over all test cases doesn't exceed $2 \cdot 10^5$.

Output

For each test case output a single integer — the largest possible number of **odd** subarrays that you can get after splitting the permutation into several consecutive subarrays.

Examples

Input	Output

5
3
1 2 3
4
4 3 2 1
2
1 2
2
2 1
6
4 5 6 1 2 3
	0
	2
	0
	1
	1

Note

In the first and third test cases, no matter how we split our permutation, there won't be any odd subarrays.

In the second test case, we can split our permutation into subarrays $[4, 3]$, $[2, 1]$, both of which are odd since their numbers of inversions are 1.

In the fourth test case, we can split our permutation into a single subarray $[2, 1]$, which is odd.

In the fifth test case, we can split our permutation into subarrays $[4, 5]$, $[6, 1, 2, 3]$. The first subarray has 0 inversions, and the second has 3, so it is odd.