Problem Q
Longest V-Shape Subsequence

Time limit: 3 seconds
Memory limit: 256 megabytes

Problem Description

Suppose you are given a seuquence S of integers $s_1, \ldots, s_n$. $s_{i_1}, \ldots, s_{i_k}$ is a V-shape subsequence of S if the following conditions.

- $i_1 < i_2 < \cdots < i_k$.
- $k > 2$.
- There exists c such that $1 < c < k$, $s_{i_1} > s_{i_2} > \cdots > s_{i_c}$ and $s_{i_c} < s_{i_{c+1}} < \cdots < s_{i_k}$.

Write a program to compute the length of the longest V-shape subsequence of S.

Input Format

The first line of the input contains an integer t ($t \leq 25$) indicating the number of test cases. Each test case consists of two lines. The first line contains an integer n which is the length of the sequence S. The second line contains n 32-bit integers $s_1, \ldots, s_n$ separated by blanks. You may assume $n \leq 10^5$.

Output Format

For each test case, output the length of the longest V-shape subsequence of S. If there does not exist such subsequence, output `0`.

Sample Input

```
3
3
1 0 1
5
0 1 0 1 0
7
1 2 3 4 5 6 7
```

Sample Output

```
3
3
0
```