Problem

Initially, Chef had an array A of length N. Chef performs the following operation on A **at most** once:

- Select L and R such that $1 \leq L \leq R \leq N$ and set $A_i := A_i + 1$ for all $L \leq i \leq R$.

Determine the **maximum** number of *inversions* Chef can decrease from the array A by applying the operation **at most** once.
More formally, let the final array obtained after applying the operation **at most** once be B. You need to determine the **maximum** value of $inv(A) - inv(B)$ (where $inv(X)$ denotes the number of *inversions* in array X).

Note: The number of *inversions* in an array X is the number of pairs (i, j) such that $1 \leq i < j \leq N$ and $X_i > X_j$.

Input Format

- The first line contains a single integer T — the number of test cases. Then the test cases follow.
- The first line of each test case contains an integer N — the size of the array A.
- The second line of each test case contains N space-separated integers $A_1, A_2, \ldots, A_N$ denoting the array A.

Output Format

For each test case, output the **maximum** value of $inv(A) - inv(B)$ which can be obtained after applying at most one operation.

Constraints

- $1 \leq T \leq 10^5$
- $1 \leq N \leq 10^5$
- $1 \leq A_i \leq N$
- Sum of N over all test cases does not exceed $2 \cdot 10^5$.

Sample 1:

Input	Output
3 5 4 2 3 1 5 6 1 2 3 4 5 6 4 2 1 1 1	2 0 3

Explanation:

Test case 1: The initial array A is $[4, 2, 3, 1, 5]$ which has 5 inversions. We can perform operation on $L = 3, R = 4$. The resultant array will be $[4, 2, 4, 2, 5]$ which has 3 inversions. Therefore we reduce the number of inversion by 2 which is the maximum decrement possible.

Test case 2: The initial array A is $[1, 2, 3, 4, 5, 6]$ which has 0 inversions. In this case, we do not need to apply any operation and the final array B will be same as the initial array A. Therefore the maximum possible decrement in inversions is 0.

Test case 3: The initial array A is $[2, 1, 1, 1]$ which has 3 inversions. We can perform operation on $L = 2, R = 4$. The resultant array will be $[2, 2, 2, 2]$ which has 0 inversions. Therefore we reduce the number of inversion by 3 which is the maximum decrement possible.