Compare And Swap

Time Limit : 1sec

Statement

Insertion sort is a simple sorting algorithm that builds the final sorted array one item at a time.

Given an array A of distinct integers , find difference between number of compare function calls and number of swap function calls by above algorithm when applied on A.

Let us take an example with A = {1, 2, 4, 3}. If we apply insertion sort as above on A we call sequence of compare and swap functions in following order

```
compare (A[0], A[1])
compare (A[1], A[2])
compare (A[2], A[3])
swap    (A[2], A[3])
compare (A[1], A[2])
```

Here compare function is called 4 times, swap function is called 1 time. The answer is 4-1 = 3.

Input

- The first line of the input contains an integer T denoting the number of test cases. test cases follow
- The first line of each test case contains a single integer N denoting length of array A.
- The second line of each test case contains N space-separated integers A_0, A_1, ..., A_{N-1} denoting the elements of A.

Output

- For each test case, output a single line containing difference between number of compare function calls and number of swap function calls.

Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 100000$
- $1 \leq A[i] \leq N$

Example

Input:
6
2
1 2
2
2 1
4
1 2 4 3
4
2 3 1 4
4
4 3 2 1
10
5 3 2 4 1 6 7 9 8 10

Output:
1
0
3
2
0
6