Problem G - Apple Masterpiece

Lucca's not quite happy about his abstract artpiece made from tanks of apple juice lined up in a row in positions numbered from 1 to n. t

He thinks the perfect art piece should have the exactly right *inversion number*. The inversion number of his art is the number of pairs of positions $i < j$ such that $a_i > A_j$.

Lucca hasn't told anyone about the perfect inversion number he's aiming for, but he wants your help in figuring out the inversion number of his art piece right now.

Input

The first line contains a single integer T denoting the number of test cases.

Each test case begins with a single number n ($1 \leq n \leq 100,000$) denoting the number positions in his artpiece.

On the next line is n numbers a_i ($1 \leq a_i \leq n$) indicating the heights of the tanks of apple juice in the ith position. Each of the a_is are unique.

Output

Output for every test case a single number, the inversion number of Lucca's art piece.

Sample Input

```
3
5
2 1 5 3 4
10
6 4 2 10 3 1 9 7 8 5
20
17 15 12 10 1 3 20 16 2 11 13 7 4 9 5 6 18 19 14 8
```

Sample Output

```
3
21
97
```