Inversion Count

Let A[0...n - 1] be an array of n distinct positive integers. If i < j and A[i] > A[j] then the pair (i, j) is called an inversion of A. Given n and an array A your task is to find the number of inversions of A.

Input

The first line contains t, the number of testcases followed by a blank space. Each of the t tests start with a number n (n <= 200000). Then n + 1 lines follow. In the ith line a number A[i - 1] is given (A[i - 1] <= 10^7). The (n + 1)th line is a blank space.

Output

For every test output one line giving the number of inversions of A.

Example

Input:

```
2

3
3
1
2

5
2
3
8
6
1
```

Output:

```
2
5
```