Number List

HackerRank

Sam is playing with an array, A, of N positive integers. Sam writes a list, S, containing all A's *contiguous subarrays*, and then replaces each subarray with its respective *maximum element*.

For example, consider the following A where $N = 3$:
$A = \{1, 2, 3\}$
Subarrays of A: $S_{initial} = \{\{1\}, \{2\}, \{3\}, \{1, 2\}, \{2, 3\}, \{1, 2, 3\}\}$
Updated (Maximum) Subarrays: $S_{maximums} = \{\{1\}, \{2\}, \{3\}, \{2\}, \{3\}, \{3\}\}$

Help Sam determine how many numbers in $S_{maximums}$ are *greater than* K.

Input Format

The first line contains a single integer, T (the number of test cases). Each test case is described over two lines:
The first line of each test case contains two space-separated integers, N (the number of elements in array A) and K, respectively.
The second line of each test case contains N space-separated integers describing the elements in A.

Constraints

$1 \leq T \leq 10^5$
$1 \leq N \leq 2 \times 10^5$
$1 \leq A_i \leq 10^9$
$0 \leq K \leq 10^9$
$The\ sum\ of\ N\ over\ all\ test\ cases\ does\ not\ exceed\ 10^6$.

Output Format

For each test case, print the number of $maximums > K$ in $S_{maximums}$ on a new line.

Sample Input

```
2
3 2
1 2 3
3 1
1 2 3
```

Sample Output

```
3
5
```

Explanation

Both test cases use the same A as described in the *Problem Statement*, so $S_{maximums} = \{\{1\}, \{2\}, \{3\}, \{2\}, \{3\}, \{3\}\}$ for both test cases.

Test Case 0: $K = 2$
$S_{maximums}$ has 3 elements > 2, so we print 3.

Test Case 1: $K = 1$
$S_{maximums}$ has 5 elements > 1, so we print 5.