

Week 1

Autumn 2023

Handout: 20.09.2023 18:00

AlgoLab

Due: 04.10.2023 16:00

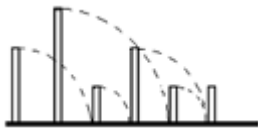
</> Dominoes

Dominoes

Playing with dominoes is a lot of fun. You can, for example, place them in long lines so that when the first tile is toppled, it topples the second, which topples the third, etc., resulting in all of the tiles falling.

In this problem, you are dealing with a special kind of domino set, in which the tiles are of different heights. Your task is to determine, given an arrangement of these tiles in a line, how many of the domino tiles will fall after toppling the left-most domino.

More precisely, we have the following set-up: the dominoes are placed at successive points on the integer line, the first at position 0 , the second at 1 , and so on. If a tile of height h_i at position i is toppled, this causes the tiles at all positions j such that $i < j$ and $h_i > h_j$ to fall as well.



Input

The first line of the input contains the number of test cases. Each of the test cases is described as follows.

- It starts with a line containing an integer n denoting the number of dominoes ($n \geq 1$).
- The following line contains integers h_0, h_1, \dots, h_{n-1} , separated by a space, where h_i denotes the height of the domino placed at the i -th position ($0 \leq i < n$).

Output

For each test case output a single line that consists of a single integer denoting the number of domino tiles that will fall after toppling the left-most tile.

Points

There are two groups of test sets, worth 10 points in total.

1. For the first group of test sets, worth 5 points, you may assume that $n \leq 10^5$.
2. For the second group of test sets, worth 5 points, there are no additional assumptions.

