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C. Need More Arrays

time limit per test: 2 seconds memory limit per test: 256 megabytes

Given an array a and n integers. It is sorted in non-decreasing order, that is, $a_i \leq a_{i+1}$ for all $1 \leq i < n$.

You can remove any number of elements from the array (including the option of not removing any at all) without changing the order of the remaining elements. After the removals, the following will occur:

- a_1 is written to a new array;
- if $a_1+1 < a_2$, then a_2 is written to a new array; otherwise, a_2 is written to the same array as a_1 :
- if $a_2+1 < a_3$, then a_3 is written to a new array; otherwise, a_3 is written to the same array as a_2 ;
- ...

For example, if a = [1, 2, 4, 6], then:

- $a_1 = 1$ is written to the new array, resulting in arrays: [1];
- $a_1 + 1 = 2$, so $a_2 = 2$ is added to the existing array, resulting in arrays: [1, 2];
- $a_2+1=3$, so $a_3=4$ is written to a new array, resulting in arrays: [1,2] and [4];
- $a_3 + 1 = 5$, so $a_4 = 6$ is written to a new array, resulting in arrays: [1, 2], [4], and [6].

Your task is to remove elements in such a way that the described algorithm creates as many arrays as possible. If you remove all elements from the array, no new arrays will be created.

Input

The first line of input contains one integer t ($1 \le t \le 10^4$) — the number of test cases.

The first line of each test case contains one integer n ($1 \le n \le 2 \cdot 10^5$) — the length of the array.

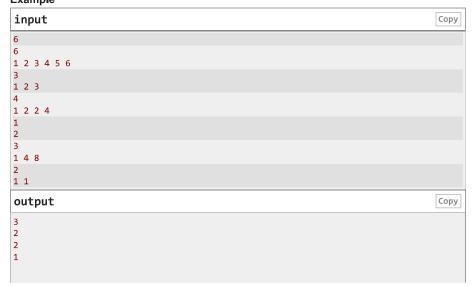
The second line of each test case contains n integers a_1,a_2,\ldots,a_n ($1\leq a_i\leq 10^6$, $a_i\leq a_{i+1}$) — the elements of the array.

It is guaranteed that the sum of n across all test cases does not exceed $2 \cdot 10^5$.

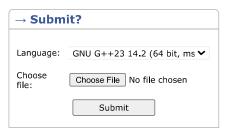
Output

For each test case, output one integer — the maximum number of arrays that can be obtained by removing any (possibly zero) number of elements.

Example







→ Last submissions		
Submission	Time	Verdict
321468729	May/26/2025 18:28	Accepted

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Note

In the first example, you can remove a_3 and a_5 , then a=[1,2,4,6], the process of forming arrays for it is shown in the statement.

In the second example, you need to remove a_2 , after which a=[1,3], and the arrays [1] and [3] will be written.

In the third example, no removals are needed; for a=[1,2,2,4], the arrays [1,2,2] and [4] will be written.

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