New Jobs

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

Naman got a job and so did Aayush and Taejas. Now both of them have been given a task by their senior. The task is as follow:

1) They are given an array **A** which has **n** elements $a_1,\ a_2,\ ....a_n$.

2) Aayush has to select a sub array from index **i** to **j** and Taejas has to select a sub array from index **k** to **l** such that both the sub arrays are increasing.

3) The following inequality should also hold: $i\ \leq\ j\ <k\ \leq\ l$
(Or in other words both the sub arrays should not overlap).

4) When Aayush and Taejas concatenate their sub arrays (with Aayush's sub array first), the resulting sequence should also be increasing. That is the sequence $a_i, ...a_j,\ a_k....a_l$ should be increasing.

Finally they should output the length of this sequence. (Note: here increasing does not imply strictly increasing)

Now Aayush and Taejas want to impress their senior and so they want to make the largest such sequence and find it's length. Both of them are very busy right now and they don't have time to do other things. So help them by doing this task on their behalf.

Input

The first line contains a single integer **n** denoting the number of integers in the array. The next line contains **n** space separated integers $a_1,\ a_2,\ ....a_n$.
Here
$2 \leq$ n ≤ 2000
$1 \leq\ a_i \leq 10^5$ for $1 \leq$ i $\leq$ n

Output

Output a single integer denoting the length of the largest possible sequence that can be made following the rules mentioned. If no such sequence can be formed, the answer would be 0.

Examples

standard input	standard output
8 10 1 3 8 9 3 6 7	5
5 1 2 3 4 5	5

Note

In the first example, Aayush can choose the sub array [1,3] and Taejas can choose [3,6,7]. Each of them are increasing and after concatenation, the sequence remains increasing (i.e. [1,3,3,6,7]). This is the maximum possible length among all the sequences that we can make following the rule.