

Problem 2. Sequence

Recently, Ivancho has been studying different algorithm used for sorting arrays. He has already learned most of them but still can't use them in problems and now he is a bit confused.

So here is the problem. You are given an array of integers and you are allowed to do the following operation: you take a single element from the array, delete it and add it to the end of the array. What is the minimum number of operation required to sort the array.

Input: On the first line of the input file **seq.in** will be written a single integer N. Follow N numbers A_i – the array.

Output: The output file **seq.out** must contain a single number – the minimum number of operations required to sort the array.

Constraints:

$$1 \leq N \leq 100000$$

$$1 \leq A_i \leq 1000$$

TIME LIMIT – 0.5 sec

Example:

seq.in	seq.out
8 24 3 15 6 26 6 10 8	4