Rising Trend

The world financial crisis is quite a subject. Some people are more relaxed while others are quite anxious. John is one of them. He is very concerned about the evolution of the stock exchange. He follows stock prices every day looking for rising trends. Given a sequence of numbers $p_1, p_2,\ldots,p_n$ representing stock prices, a rising trend is a subsequence $p_{i1} \leq p_{i2} \leq \ldots \leq p_{ik}$, with $i_1 < i_2 < \ldots < i_k$. John's problem is to find very quickly the longest rising trend.

Input

Input contains multiple test cases and is terminated by end of file. The first line of each test case contains one integer n, indicating the number of stock prices. ($1 \leq n \leq 1000000$).The following line contains n integers, the **i-th** integer is the price of the the **i-th** stock, the integer will not be bigger than 2^{31}-1.

Output

For each test case, print the length of the longest rising trend in a separate line.

Sample Input

7

1 7 3 7 3 6 5

Sample Output

4

Hints

In the first example, the longest rising trend will be

1 3 3 6

1 3 3 5

So, the maximum length is 4.