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## Missile Defence System

Language:  ▾

**Time Limit:** 3000MS

**Memory Limit:** 65536K

**Total Submissions:** 4480

**Accepted:** 1087

## Description

To play against the threats of malicious countries nearby, Country R has updated their missile defence system. The new type system can bring down a series of missiles as long as they are coming in ascending order by altitude or descending order by altitude.

Given the heights of a sequence of coming missiles, the general wants to know how many sets of the new type systems are needed to bring down all of them.

## Input

The input consists of several test cases. The first line of each test case contains an integer  $n$  ( $1 \leq n \leq 50$ ). The next line contains  $n$  different integers indicating the heights.

## Output

For each test case output a single line containing the number of systems needed.

## Sample Input

```
5
3 5 2 4 1
0
```

## Sample Output

2

## Hint

Two sets of systems are needed for the sample. One brings down 3, 4 and the other brings down 5, 2, 1.

## Source

POJ Founder Monthly Contest – 2008.10.05, facer

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