

# Another Permutation Problem

Given a permutation of  $n$  elements  $(1, 2, \dots, n)$ :  $A = (a_1, a_2, \dots, a_n)$ . We define a sequence  $P(A) = (p_1, p_2, \dots, p_{n-1})$  where  $p_i = 0$  if  $a_i > a_{i+1}$  and  $p_i = 1$  if  $a_i < a_{i+1}$ . Given a permutation  $B$ , find the number of all permutations  $C$  where  $P(C) = P(B)$  including the permutation  $B$  itself.

**The length of your solution should not be more than 0.5kB.**

## Input

Multiple test cases. For each test case:

The first line contains an integer  $n$  ( $1 \leq n \leq 100$ ). The second line contains  $n$  integers representing the permutation, all of which are separated by single spaces.

Input terminates by a single zero.

## Output

For each test case:

The output contains a single line with a single integer - the number of the permutations having the same value for  $P(A)$  when given the permutation  $A$ .

## Example

**Input:**

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

**Output:**

```
1
5
```