J. Permutation Pattern

A sequence $a_1, \ldots, a_m$ of m distinct numbers is called *without 231* if there is **no** triples (i, j, k) where $1 \leq i < j < k \leq m$ and $a_k < a_i < a_j$.

Bobo has a permutation $p_1, \ldots, p_n$ of $1, \ldots, n$, and he can remove some (possibly none, but not all) elements from the permutation. Find the number of sequences without 231 among $(2^n - 1)$ resulting permutations.

Input

The input consists of several test cases terminated by end-of-file. For each test case,

The first line contains an integer n.

The second line contains n integers $p_1, \ldots, p_n$.

- $1 \leq n \leq 50$
- $1 \leq p_i \leq n$ for each $1 \leq i \leq n$
- In each input, the sum of n does not exceed 500.

Output

For each test case, output an integer which denotes the number of sequences.

Sample Input

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

Sample Output

```
3
7
11
```