Problem K
Magic Lamp 2
Time Limit: 1 second

You are so smart to solve the first quest of the Genie. Are you ready for the second quest? Let's go.

Given a sequence a which is a permutation of n numbers $1, 2, \ldots, n$.

A subsequence $[l, r]$ $(1 \le l \le r \le n)$ of the permutation a is a sequence whose elements are $a_l, a_{l+1}, \ldots, a_r$. The subsequence $[l, r]$ is called a Min-Max Sequence if its maximum and minimum values lie on both ends of that sequence.

Your task is to count the number of Min-Max Sequences of the permutation a.

Input

The first line contains an integer n $(1 \le n \le 10^6)$

The second line contains n numbers $a_1, a_2, \ldots, a_n$.

Output

Print one single integer which is the number of Min-Max Sequences of a permutation a.

Sample Input	Sample Output
5 2 5 3 1 4	10

Explanation for the sample:

There are 10 Min-Max sequences which are: 2; 2 5; 5; 5 3; 5 3 1; 3; 3 1; 1; 1 4