

# Problem F

## Mountainous Palindromic Subarray

Time Limit: 2 second(s)

Memory Limit: 2G

An array is *Mountainous* if it is strictly increasing, then strictly decreasing. Note that *Mountainous* arrays must therefore be of length three or greater.

A *Subarray* is defined as an array that can be attained by deleting some prefix and suffix (possibly empty) from the original array.

An array or subarray is a *Palindrome* if it is the same sequence forwards and backwards.

Given an array of integers, compute the length of the longest *Subarray* that is both *Mountainous* and a *Palindrome*.

### Input

The first line of input contains an integer  $n$  ( $1 \leq n \leq 10^6$ ), which is the number of integers in the array.

Each of the next  $n$  lines contains a single integer  $x$  ( $1 \leq x \leq 10^9$ ). These values form the array. They are given in order.

### Output

Output a single integer, which is the length of the longest *Mountainous Palindromic Subarray*, or  $-1$  if no such array exists.

#### Sample Input 1

8  
2  
1  
2  
3  
2  
1  
7  
8

#### Sample Output 1

5

**Sample Input 2**

5  
2  
5  
8  
7  
2

**Sample Output 2**

-1