Problem F. Mountainous Palindromic Subarray

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	1024 mebibytes

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 backward.

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 ($1 \le n \le 10^6$), which is the number of integers in the array.

Each of the next n lines contains a single integer x ($1 \le x \le 10^9$). 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 of no such array exists.

Examples

standard input	standard output
8 2 1 2 3 2 1 7 8	5
5 2 5 8 7 2	-1