Problem A. Zigzag

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

A sequence is called "**Zigzag**"if no three of its consecutive elements are monotone.

More formally, if sequence A of length N is Zigzag if, for all i $(1 \leq i \leq N-2)$, neither $A_i \leq A_{i+1} \leq A_{i+2}$ nor $A_i \geq A_{i+1} \geq A_{i+2}$ holds.

For given sequence A of length N, you should find a longest subsegment of A which is a Zigzag sequence.

Sequence B of length M is subsegment of sequence A of length N if, for some i, $B_1 = A_i$, $B_2 = A_{i+1} \cdots$, $B_M = A_{i+M-1}$ holds.

Input

Input consists of two lines.

The first line contains integer N, length of sequence A. $(3 \leq N \leq 5,000)$

The second line contains space-separated N integers. ith number is A_i. $(1 \leq A_i \leq 10^9)$

Output

Print out the length of longest subsegment of A which is a Zigzag sequence.

Example

standard input	standard output
5 1 3 4 2 5	4