



## Problem B. Shirin, Shirin, Naz Shirin, Shirinesh Kar-dam

Shirin lives in a one-dimensional world. Today she wants to play LAY-LAY. However, LAY-LAY in her world is a little different from ours. There is a line with  $n$  positions, and every position has a number written on it, not necessarily distinct. At first, Shirin is in the first position. To win the game, she wants to erase the entire line in a non-decreasing order. The rules of the game are as follows:

1. Jump to the next unerased position (if possible)
2. Jump to the previous unerased position (if possible)
3. Erase the current position which she is in, and jump to the next unerased position (if possible)
4. Erase the current position which she is in, and jump to the previous unerased position (if possible)

What is the minimum number of operations she needs to win?

### Input

The first line contains a single integer  $N$ .

The second line contains the line numbers. ( $1 \leq N \leq 10^5$ ,  $0 \leq A_i \leq 10^9$ )

### Output

Print the answer on the first line.

### Examples

test	answer
5 2 1 3 3 2	8
4 1 2 3 4	4