Yes but there is more

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

As we all know the greatest problems require the smallest statements, so the author of this problem decided to go to the point directly.

ElBaba has been given an array A of size N and the author told him that you need to find $F(A)$. The function $F(A)$ should return the maximum possible cost of a subsequence of the array A. But, there's a condition you have to consider. The first element of the original array and the last element of it must be in the chosen subsequence.

The cost of the subsequence is the summation of this formula for every two consecutive elements in the subsequence: $(j - i + 1) * A_i - A_j$ where

1. i and j represents the indexes of the elements in the original array and $(i < j)$.
2. A_i and A_j represent the elements themselves.

A sequence A is a subsequence of a sequence B if A can be obtained from B by deletion of several (possibly, zero or all) elements without changing their order.

For example, let's say $N = 5$, $A = [5, 1, 4, 2, 4]$. One of the possible subsequences is $[5, 4, 4]$.

Consecutive elements mean any two indexes i and j where $j = i + 1$ in the chosen subsequence.

Input

The input consists of two lines.

The first line will contain an integer $N(2 \leq N \leq 10^6)$ — the number of elements in the array.

The second line will contain N integers $(1 \leq A_i \leq 10^6)$ — the elements of the array.

Output

You should output one integer, the answer to the problem.

Examples

standard input	standard output
4 1 2 3 4	3
4 1 3 2 4	4

Note

For the **second example: The optimal subsequence is** $[1, 3, 4]$.

The cost can be calculated as follows:

1. **for the first and second elements** $(1, 3)$**,** $cost = (2 - 1 + 1) * 1 - 3 = -1$.
2. **for the second and third elements** $(3, 4)$**,** $cost = (4 - 2 + 1) * 3 - 4 = 5$.

So, the total $cost = -1 + 5 = 4$.

You might need to use Fast input/output for large input.