Mock CCO '18 Contest 1 Problem 6 - A Combining Problem

Given a list of N integers, we can take two adjacent integers, remove both of them, and insert the larger of the two where the two integers originally were. This incurs cost equal to the larger of the two integers. Compute the minimum cost needed to reduce this list to having just one integer.

Constraints

$1 \leq N \leq 10^6$

$0 \leq a_i \leq 10^9$

For at most 30% of marks, $N \leq 500$.

For at most 50% of marks, $N \leq 20 \cdot 10^3$.

Input Specification

The first line will contain a single integer, N.

Each of the next N lines will contain an integer a_i, the integers of the list in order.

Output Specification

Output the minimum cost.

Sample Input

```
3
1
2
3
```

Sample Output

```
5
```