NOIP '18 P1 - Paving Roads

Time limit: 1.0s **Memory limit:** 512M

You have an array of length n that are initially zero. In each step, you may choose a consecutive interval $[L, R]$ and increase the values by 1. Find the minimum number of operations required so that the i-th entry of the array is equal to d_i.

Input Specification

The input file has two lines. The first line has an integer n denoting the length of the array. The second line contains n integers separated by one space. The i-th integer denotes d_i.

Output Specification

The output contains only one integer denoting the minimum number of operations required.

Sample Input

```
6
4 3 2 5 3 5
```

Sample Output

```
9
```

Explanation

One possible optimal solution is to choose $[1, 6], [1, 6], [1, 2], [1, 1], [4, 6], [4, 4], [4, 4], [6, 6], [6, 6]$ as the subintervals to increment.

Constraints

For 30% of test data, $1 \leq n \leq 10$.
For 70% of test data, $1 \leq n \leq 1000$.
For 100% of test data, $1 \leq n \leq 100\,000$, $0 \leq d_i \leq 10\,000$.