You are given a histogram consisting of N columns of heights X_1, X_2, … X_N, respectively. The histogram needs to be transformed into a roof using a series of operations. A roof is a histogram that has the following properties:

- A single column is called the top of the roof. Let it be the column at position i.
- The height of the column at position j ($1 \le j \le N$) is $h_j = h_i - |i - j|$.
- All heights h_j are positive integers.

An operation can be increasing or decreasing the heights of a column of the histogram by 1. It is your task to determine the minimal number of operations needed in order to transform the given histogram into a roof.

INPUT

The first line of input contains the number N ($1 \le N \le 10^5$), the number of columns in the histogram.
The following line contains N numbers X_i ($1 \le X_i \le 10^9$), the initial column heights.

OUTPUT

You must output the minimal number of operations from the task.

SCORING

In test cases worth 60% of total points, it will hold $N \le 5000$.

SAMPLE TESTS

input	input	input
4	5	6
1 1 2 3	4 5 7 2 2	4 5 6 5 4 3
output	**output**	**output**
3	4	0

Clarification of the first test case: By increasing the height of the second, third, and fourth column, we created a roof where the fourth column is the top of the roof.
Clarification of the second test case: By decreasing the height of the third column three times, and increasing the height of the fourth column, we transformed the histogram into a roof. The example is illustrated below.