Task Po

Tinky Winky left a sequence of n zeroes in the Tubbytronic Superdome, and left for a walk with Dipsy. When he came back, he saw that a misdeed has been done. The sequence was changed, and Po was smiling mischeviously in the corner of the room.

Oh dear! Po, what have you done?! – asked Tinky Winky in horror.

I enhanced the sequence! – replied Po.

After cross-examination, it was established that Po did a number of *enhancements* on the sequence. In every enhancement, she took a **segment** of a sequence and **increased** all elements in the segment by some positive integer. Also, every two segments were either disjoint or one was completely contained in other.

How many enhancements have you done, Po? – Laa-Laa inquired.

*I really don't know! I'm only sure I did the **minimum** number of enhancements possible to get this sequence!* – said Po exhaustedly.

Then it surely must be m! – proclaimed Noo-Noo. [1]

What number did Noo-Noo say?

Input

The first line contains an integer n ($1 \leq n \leq 100\,000$), the length of the sequence.

The second line contains n nonnegative integers a_i ($0 \leq a_i \leq 10^9$), the sequence after Po's enhancements.

Output

Output m, the minimum possible number of enhancements.

Scoring

In test cases worth 30 points, it holds $1 \leq n \leq 1000$.

Examples

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

Clarification of the second example:

Po first increased all elements of the sequence by 2, and then increased the middle three by 1.

[1] Noo-Noo is the Teletubies' vacuum cleaner pet.