Problem E
Opening Ceremony
Problem ID: ceremony



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For the grand opening of the algorithmic games in NlogNsglow, a row of tower blocks is set to be demolished in a grand demonstration of renewal. Originally the plan was to accomplish this with controlled explosions, one for each tower block, but time constraints now require a hastier solution.

To help you remove the blocks more rapidly you have been given the use of a Universal Kinetic / Incandescent Energy Particle Cannon (UKIEPC). On a single charge, this cutting-edge contraption can remove either all of the floors in a single tower block, or all the x-th floors in all the blocks simultaneously, for user's choice of the floor number x. In the latter case, the blocks that are less than x floors high are left untouched, while for blocks having more than x floors, all the floors above the removed x-th one fall down by one level.

Task

Given the number of floors of all towers, output the minimum number of charges needed to eliminate all floors of all blocks.

Input

The first line of input contains the number of blocks n, where $2 \leq n \leq 100\,000$. The second line contains n consecutive block heights h_i for $i = 1, 2, \ldots, n$, where $1 \leq h_i \leq 1\,000\,000$.

Output

Output one line containing one integer: the minimum number of charges needed to tear down all the blocks.

Sample Input 1	Sample Output 1
6 2 1 8 8 2 3	5

Sample Input 2	Sample Output 2
5 1 1 1 1 10	2

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