B. Roadside Trees (Simplified Edition)

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Squirrel Liss loves nuts. There are n trees (numbered 1 to n from west to east) along a street and there is a delicious nut on the top of each tree. The height of the tree i is h_i. Liss wants to eat all nuts.

Now Liss is on the root of the tree with the number 1. In one second Liss can perform one of the following actions:

- Walk up or down one unit on a tree.
- Eat a nut on the top of the current tree.
- Jump to the next tree. In this action the height of Liss doesn't change. More formally, when Liss is at height h of the tree i ($1 \le i \le n - 1$), she jumps to height h of the tree $i + 1$. This action can't be performed if $h > h_{i+1}$.

Compute the minimal time (in seconds) required to eat all nuts.

Input

The first line contains an integer n ($1 \le n \le 10^5$) — the number of trees.

Next n lines contains the height of trees: i-th line contains an integer h_i ($1 \le h_i \le 10^4$) — the height of the tree with the number i.

Output

Print a single integer — the minimal time required to eat all nuts in seconds.

Examples

input
2 1 2
output
5

input
5 2 1 2 1 1
output
14

→ Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

Codeforces Round #162 (Div. 2)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Problem tags

greedy implementation

No tag edit access

→ Contest materials

- Announcement
- Tutorial