

C. Sequence

time limit per test: 1 second
 memory limit per test: 64 megabytes

Little Petya likes to play very much. And most of all he likes to play the following game:

He is given a sequence of N integer numbers. At each step it is allowed to increase the value of any number by 1 or to decrease it by 1. The goal of the game is to make the sequence non-decreasing with the smallest number of steps. Petya is not good at math, so he asks for your help.

The sequence a is called non-decreasing if $a_1 \leq a_2 \leq \dots \leq a_N$ holds, where N is the length of the sequence.

Input

The first line of the input contains single integer N ($1 \leq N \leq 5000$) — the length of the initial sequence. The following N lines contain one integer each — elements of the sequence. These numbers do not exceed 10^9 by absolute value.

Output

Output one integer — minimum number of steps required to achieve the goal.

Examples

input	Copy
5 3 2 -1 2 11	
output	Copy
4	

input	Copy
5 2 1 1 1 1	
output	Copy
1	

→ Attention

The 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, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round 13

Finished

Practice



→ Virtual participation

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Language: GNU G++23 14.2 (64 bit, ms) ▼

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