Bad Genius Meow

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

Exam season is coming and the Student Meows of KK8 are not prepared. Instead of going against their feline instincts and actually studying, they decide they will cheat by hiring Genius Meow to do their papers for them. However, their plan hit a snag when their Dean Meow released a statement requiring Student Meows to turn on their webcams during the exam.

There are N dorms in KK8 all lined in a row in which the meows will be using to take their exams. Genius Meow will be seated in the first dorm. They decide to buy a Robot Cheetah Meow to deliver their exam paper from their individual dorms to Genius Meow and back. The Robot Cheetah Meow deliver one exam paper at one time.

Robot Cheetah Meow comes with a charging station that it must start from and return to during its journey. If they command Robot Cheetah Meow to move from a^{th} dorm to b^{th} dorm, it will move in the following pattern:

1. Start at the charging station. Move from the charging station to a^{th} dorm.

2. Take one exam paper, move from the ath dorm to b^{th} dorm

3. Put down the exam paper, move from the bth dorm back to the charging station.

Robot Cheetah Meow spends 1 unit of energy to move between neighbouring dorms. In other words, moving from the ath dorm to b^{th} dorm requires $|a - b|$ units of energy. The Student Meows can place the charging station in any of the dorms. However, once placed, it cannot be moved.

In order to not raise the suspicion of Pengetua Meow, the students want to minimize the energy footprint of their plan by decreasing the energy usage of the Robot Cheetah Meow. Help the Student Meows find where to place the charging station and find the minimum energy required to power Robot Cheetah Meow for their plan.

Input

The first line contains one integer n $(1 \leq n \leq 10^5)$ — the number of dorms.

The second line contains n space-separated integers $a_1, a_2, \ldots, a_n$ $(0 \leq a_i \leq 100)$ separated by single space — the number of meows in i^{th} dorm starting from 1st dorm.

Output

In a single line, print one integer, the answer to the problem — the minimum amount of energy.

Examples

standard input	standard output
3 0 2 1	16
2 1 1	4

Note

For Sample Input 1, the answer can be obtained by placing the charging station in the second dorm. Two Meows from the second dorm would spend 4 units of energy (2 units to send the exam paper and 2 units to get the exam paper from Genius Meow), and one Meow from the third dorm would spend 8 units of energy (4 units to send the exam paper and 4 units to get the exam paper from Genius Meow). Hence, $4 \times 2 + 8 \times 1 = 16$ units is needed.

For Sample Input 2, Meows can choose the first dorm to place the charging station.