B. Balancer

time limit per test: 0.5 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Petya has k matches, placed in n matchboxes lying in a line from left to right. We know that k is divisible by n. Petya wants all boxes to have the same number of matches inside. For that, he can move a match from its box to the adjacent one in one move. How many such moves does he need to achieve the desired configuration?

Input

The first line contains integer n ($1 \le n \le 50000$). The second line contains n non-negative numbers that do not exceed 10^9, the i-th written number is the number of matches in the i-th matchbox. It is guaranteed that the total number of matches is divisible by n.

Output

Print the total minimum number of moves.

Examples

input
6 1 6 2 5 3 7
output
12