A. Pizza Separation

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Students Vasya and Petya are studying at the BSU (Byteland State University). At one of the breaks they decided to order a pizza. In this problem pizza is a circle of some radius. The pizza was delivered already cut into n pieces. The i-th piece is a sector of angle equal to a_i. Vasya and Petya want to divide all pieces of pizza into two *continuous* sectors in such way that the difference between angles of these sectors is minimal. Sector angle is sum of angles of all pieces in it. Pay attention, that one of sectors can be empty.

Input

The first line contains one integer n $(1 \le n \le 360)$ — the number of pieces into which the delivered pizza was cut.

The second line contains n integers a_i $(1 \le a_i \le 360)$ — the angles of the sectors into which the pizza was cut. The sum of all a_i is 360.

Output

Print one integer — the minimal difference between angles of sectors that will go to Vasya and Petya.

Examples

input
4 90 90 90 90
output
0

input
3 100 100 160
output
40

input
1 360
output
360

input
4 170 30 150 10
output
0

Note

In first sample Vasya can take 1 and 2 pieces, Petya can take 3 and 4 pieces. Then the answer is $|(90 + 90) - (90 + 90)| = 0$.

In third sample there is only one piece of pizza that can be taken by only one from Vasya and Petya. So the answer is $|360 - 0| = 360$.

In fourth sample Vasya can take 1 and 4 pieces, then Petya will take 2 and 3 pieces. So the answer is $|(170 + 10) - (30 + 150)| = 0$.

Picture explaning fourth sample:

Both red and green sectors consist of two adjacent pieces of pizza. So Vasya can take green sector, then Petya will take red sector.