

6385 Game

Alice and Bob are playing game. Firstly, Alice drew a regular polygon with n vertices, then assigned each vertex a number.

Then Bob's goal is to change all the numbers to non-negative numbers. He can do following operation in each step: choose one vertex i , supposed A_i is the number on vertex i , then add A_i to it's left and right adjacent vertex, and turn A_i into $-A_i$.

Now you are to help Bob to find out the minimum step to reach his goal.

Input

Multiple test cases ended with EOF.

Each test case begins with one integer n , followed a line consist of by n integers representing the numbers on the vertices clockwise.

$$2 < n \leq 10^5$$

$$|A_i| \leq 10^5$$

$$|\text{sum}\{A_i\}| \leq 10$$

Output

If Bob cannot end this game, then output 'Endless' (without quotes), otherwise output the minimum step for Bob to end this game.

Hint: In the sample, first turn -2 to 2, then the sequences became -1 2 1, then choose -1, the result is 1 1 0, all the numbers are non-negative, so the minimum step would be 2.

Sample Input

```
3
1 -2 3
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Sample Output

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2
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