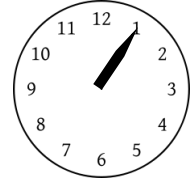


Problem J Clock

Time Limit: 1 second

Bibi just downloaded a game of wisdom from the future. The game allows players to choose the difficulty which is an integer N . After that, the computer program will display N clocks on the screen. Each clock has integer numbers from 1 to 12 written on it in clockwise direction as usual but with only one hand pointing to one number. The hand of the i -th clock is pointing at A_i .



There is a red button between every two clocks. Whenever a button between the i -th and $(i + 1)$ -th clock is pressed, the hand of the i -th clock will rotate one unit (i.e. from a number to the next) clockwise and the hand of the $(i + 1)$ -th clock will rotate one unit counter-clockwise.

The leftmost green button makes the hand of the first clock rotate one unit counter-clockwise while the rightmost green button makes the hand of the last clock rotate one unit clockwise.

Find the smallest number of times the buttons should be pressed to have all the hands point to number 12.

Input

The first line contains an integer N ($1 \leq N \leq 10^6$).

The second line contains an array of size N indicating the current value that is pointed to on each clock.

Output

Print the smallest number of times the buttons should be pressed to have all the hands point to number 12.

Sample Input

Sample Output

3 12 1 12	2
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