Sorting machine

Recently Ivancho found a new hobby of his - robotics. So he decided to create something and came up with a machine that sorts balls.

The machine is made from **N** boxes, arranged in a circle, in which the balls are put. In the middle there is a robot, which can take a ball from a random box and put it in a box neighboring it.

As Ivancho was playing with the machine, he realized that it has time come for school. So he decided to pack all the balls in a single box. But because he was short of time, he wanted to do that with as little moves as possible.

Help him by writing a program **sortmach**, which by a given number of boxes and amount of balls in every boxes, finds out the minimal number of moves required to place all the balls in a single box.

Input: The first row of the input file **sortmach.in** will contain a single number **N** - the number of boxes.
The next row will contain **N** integers $\mathbf{K_i}$ - the number of balls in the corresponding box.

Output: In the output file **sortmach.out** you should print a single integer **P** - the minimal number of moves.

Limits:
$3 <= N < 100$
$0 <= K_i < 50$

Time limit: 0.2 sec.
Memory limit: 256 MiB.

Remark: Reading and writing to a file can be done using the appropriate statement. You can use the *freopen* statement from the standard library *cstdio* by adding the flowing two lines at the beginning of your main function:

```
freopen ("sortmach.in", "r", stdin);
freopen ("sortmach.out", "w" , stdout);
```

Number of preliminary tests: 4
Number of final tests: 10

Example tests:

sortmach.in	sortmach.out
7 10 4 8 5 1 13 11	72

Output explanation:
The given amount of moves is accomplished by moving all balls in the last box (the one which originally has 11 balls).