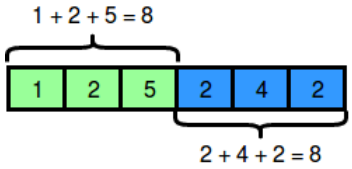
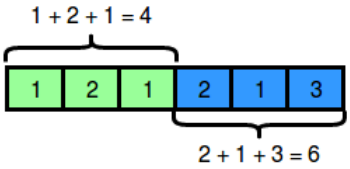
Balanced Array

Emma has an array $[a_0, a_1, a_2, \ldots, a_{n-1}]$ of size n where n is an even number. An array is balanced if the sum of the left half of the array elements is equal to the sum of right half.



Balanced Array



Unbalanced Array

To balance an array, Emma can add a non-negative integer x ($x \geq 0$) to any array element a_i. Your task is to find the smallest value of x that makes the array balanced.

Input Format

The first line contains an even integer n.

The second line contains the n integer elements of the array $a_0, a_1, a_2, \ldots, a_{n-1}$.

Constraints

- $1 \leq n \leq 100$
- $0 \leq a_i \leq 100$
- n is an even number.

Output Format

Print the minimum value of x on a single line.

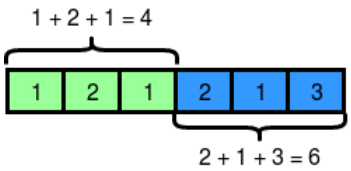
Sample Input 0

```
6
1 2 1 2 1 3
```

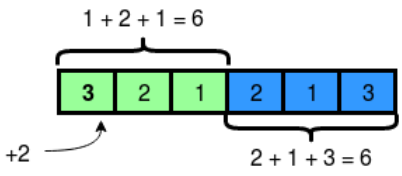
Sample Output 0

```
2
```

Explanation 0



Unbalanced Array



Unbalanced Array

The sum of first 3 elements is 4 and the sum of last 3 elements is 6. To make the array balanced you can add $x = 2$ to index 0 and make sum of both side equal to 6.

Sample Input 1

```
6
1 2 5 2 4 2
```

Sample Output 1

```
0
```

Explanation 1

The sum of both side is equal to 8, so the array is already balanced. Emma can add $x = 0$ to any index and keep it unchanged.

Sample Input 2

```
2
20 10
```

Sample Output 2

```
10
```

Explanation 2

Add $x = 10$ to index 1.