
Optimal separation

P64493_en

Given n natural numbers, find how to separate them into two sets so that the absolute value of the difference between the sums of the elements of the two sets is minimized.

Input

Input consists of several cases, each with n followed by n natural numbers between 1 and 10^6 . Assume $1 \leq n \leq 23$.

Output

For every case, print the minimum possible difference.

Sample input 1

```
5  18 10 19 14 3
4  1000 10 10 10
1  20
7  1 2 4 8 16 32 64
```

Sample output 1

```
0
970
20
1
```

Problem information

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