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CSES Problem Set

Apple Division

TASK │ SUBMIT │ RESULTS │ STATISTICS │ TESTS

Time limit: 1.00 s   **Memory limit:** 512 MB

There are n apples with known weights. Your task is to divide the apples into two groups so that the difference between the weights of the groups is minimal.

Input

The first input line has an integer n: the number of apples.

The next line has n integers $p_1, p_2, \ldots, p_n$: the weight of each apple.

Output

Print one integer: the minimum difference between the weights of the groups.

Constraints

- $1 \le n \le 20$
- $1 \le p_i \le 10^9$

Example

Input:
```
5
3 2 7 4 1
```

Output:
```
1
```

Explanation: Group 1 has weights 2, 3 and 4 (total weight 9), and group 2 has weights 1 and 7 (total weight 8).

Introductory Problems

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Tower of Hanoi	-
Creating Strings	-
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Mex Grid Construction	-
Knight Moves Grid	-

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Your submissions