

C++6 // 2D DP

Given N positive integers, separate the numbers into 2 groups such that the sums of the groups are as close as possible.

Input Specification:

The first line will contain the integer N ($1 \leq N \leq 40$), the number of numbers.

The second line will contain N positive integers space separated. Each of the numbers will be no larger than 1000.

Output Specification:

Output the smallest nonnegative difference between both groups.

Sample Input:

```
5
8 12 16 100 20
```

Sample Output:

```
44
```

Sample Input:

```
2
1 1
```

Sample Output:

```
0
```

Sample Input:

```
9
1 8 5 9 7 2 3 4 6
```

Sample Output:

```
1
```