Problem J. Juice Degustation

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Vasya plans a juice degustation party at his house. There are n different kinds of juice from Vasya's favorite parts of the world, such as Loire Valley in France, Napa Valley in California and Valle Central in Chili. He has bought c_i liters of juice of kind i.

To store the juice till the beginning of the party, Vasya needs to buy some special barrels. Each barrel is large enough to fit any amount of juice. Then, he distributes the different kinds of juice between the barrels following the special rules below:

1. All the juice of all kinds should be distributed into barrels.
2. Each barrel may contain juice of no more than two different kinds.
3. Any two barrels should have the same total amount of juice.

Note that the amount of juice in the barrels might be non-integer. Some barrels are allowed to contain only one kind of juice. Each kind of juice can be used in any number of barrels. Two different kinds of juice can be mixed in a barrel in any proportion.

The barrels are expensive, therefore Vasya wants to buy the minimum number of them in order to be able to store the juice following the above rules. Help him find this number.

Input

The first line of the input contains an integer n ($1 \le n \le 20$) — the number of different kinds of juice Vasya likes.

The second line contains n integers $c_1, c_2, \ldots, c_n$ ($1 \le c_i \le 10^9$), the i-th of them shows how many liters of i-th kind of juice Vasya has.

Output

Print one integer: the minimum number of barrels Vasya has to buy in order to be able to store all his juice following the above rules.

Examples

standard input	standard output
3 1 1 1	2
5 1 2 1 1 1	3
1 100	1

Note

In the first sample, Vasya has 3 kinds of juice, 1 liter of each kind. He can put all the juice of the first kind in the first barrel, all the juice of the second kind in the second barrel, and add 0.5 liters of juice of the third kind in each of the barrels.