Banknotes

Kile and Pogi have found N banknotes on the street. After making sure that the original owner is nowhere to be found, they decided to split the banknotes amongst themselves. In the end they want to "win" the same amount of money so they split the banknotes in such a way. Of course, the sum of the banknotes nobody ends up having is the least possible one.

Since they couldn't just leave the remaining banknotes on the street, they decided to go to a nearby casino and put everything on red, hoping that they would end up getting twice the money they bet. The roulette decided on the (lucky, for this time) number 13 and our heroes decided to split the money they won. The payout is such that Kile and Pogi will always be able to split the money they won into two equal parts.

Because of the immense adrenaline rush, the boys have lost their mathematical abilities. Help them figure out how much money each of them is taking home.

Input

The first line of input contains the integer N ($1 \leq N \leq 500$) that denotes the number of banknotes on the street. Each of the following N lines contains a single positive integer c_i that denotes the value of the ith banknote in euros. The total sum of money will not exceed 100 000 eur.

Output

You must output the amount of money each of them took home.

Sample input	Sample output
4 2 3 1 6	6
5 2 3 5 8 13	18

Clarification of the first test case

Kile took banknotes worth 2, 3 and 1 kn, and Pogi took the banknote worth 6 kn.

Clarification of the second test case

Kile took the banknotes worth 5 and 8 eur, and Pogi took the banknote worth 13 eur. The remaining banknotes are worth 2 and 3 eur, which the boys have "doubled" in the casino. The total earnings of each of them is 13 + 5 = 18 eur.