

# Teleports

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

There are  $n$  chests arranged in a row, numbered from 1 to  $n$ . One of the chests contains treasure, and all the rest are empty. You want to find the treasure, but opening all the chests takes too much time, so you want to determine the chest that contains the treasure.

You also have  $n$  teleports, the  $i$ -th of them is located on top of chest  $i$ . You can activate any teleport, and the treasure will be symmetrically teleported to the other side of the teleport. So, if you activate the teleport  $a$ , and the treasure is located inside chest  $b$ , the new position for the treasure will be  $b + (a - b) \cdot 2$ . If there is a chest with that number, the treasure will be teleported to the chest with number  $b + (a - b) \cdot 2$ . If there is no chest with that number, the treasure will remain in chest  $b$  and you will know that teleportation was not successful.

Each teleport has it's own cost to use, for a single use of teleport  $i$ , you have to pay  $c_i$ . Find the smallest amount of money you have to spend, so that after using multiple teleports you can determine the position of the treasure.

## Input

The first line contains a single integer  $n$  ( $1 \leq n \leq 500$ ) — the number of chests.

The second line contains  $n$  integers  $c_1, c_2, \dots, c_n$  ( $1 \leq c_i \leq 10^9$ ) — the cost of a single use of each teleport.

## Output

Output the minimum amount of money you need, so that you can determine the position of the treasure.

## Examples

standard input	standard output
3 5 2 1	4
12 18 19 11 2 20 15 18 1 14 1 1 1	6

## Note

In the first example, first you can activate teleport 3. If teleportation was successful, the only valid chest for that is 3. If teleportation was not successful, you will know that treasure is inside chests 1 or 2. Then you can activate teleport 2, after that the treasure will be inside chests 2 or 3. After that you can activate teleport 3, if teleportation was successful, the treasure is inside chest 3, otherwise it's inside chest 2.