

CATALOG CONTESTS

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# A. Balanced Rating Changes

time limit per test: 1 second
memory limit per test: 512 megabytes
input: standard input
output: standard output

Another Codeforces Round has just finished! It has gathered n participants, and according to the results, the expected rating change of participant i is  $a_i$ . These rating changes are *perfectly balanced* — their sum is equal to 0.

Unfortunately, due to minor technical glitches, the round is declared *semi-rated*. It means that all rating changes must be divided by two.

There are two conditions though:

- For each participant i, their modified rating change  $b_i$  must be integer, and as close to  $\frac{a_i}{2}$  as possible. It means that either  $b_i = \lfloor \frac{a_i}{2} \rfloor$  or  $b_i = \lceil \frac{a_i}{2} \rceil$ . In particular, if  $a_i$  is even,  $b_i = \frac{a_i}{2}$ . Here  $\lfloor x \rfloor$  denotes rounding down to the largest integer not greater than x, and  $\lceil x \rceil$  denotes rounding up to the smallest integer not smaller than x.
- The modified rating changes must be perfectly balanced their sum must be equal to 0.

Can you help with that?

### Input

The first line contains a single integer n ( $2 \le n \le 13\,845$ ), denoting the number of participants.

Each of the next n lines contains a single integer  $a_i$  ( $-336 \le a_i \le 1164$ ), denoting the rating change of the i-th participant.

The sum of all  $a_i$  is equal to 0.

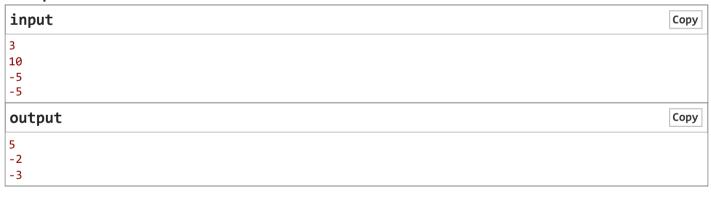
### Output

Output n integers  $b_i$  , each denoting the modified rating change of the i-th participant in order of input.

For any i, it must be true that either  $b_i=\lfloor \frac{a_i}{2} \rfloor$  or  $b_i=\lceil \frac{a_i}{2} \rceil$ . The sum of all  $b_i$  must be equal to 0.

If there are multiple solutions, print any. We can show that a solution exists for any valid input.

### **Examples**



output	
5	
-2	
-3	
input	Сору
7	
-7	
-29	
0	
3	
24	
-29	
38	
output	Сору
-3	
-15	
0	
2	
2 12	
-15	
19	

### Note

In the first example,  $b_1=5$  ,  $b_2=-3$  and  $b_3=-2$  is another correct solution.

In the second example there are 6 possible solutions, one of them is shown in the example output.

# ICPC Assiut Advanced Newcomers 2023 Private Participant

# → Group Contests

ICPC CHALLENGE 🗶



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- ICPC Assiut Advanced Newcomers
   2023 Onsite Contest 2
- ICPC Assiut Advanced Newcomers 2023 Contest 1
- ICPC Assiut Advanced Newcomers 2023 Onsite Contest 1

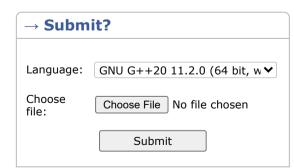
# ICPC Assiut Advanced Newcomers Practice #1 Finished Practice

### $\rightarrow$ Virtual participation



Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you -solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you -solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest



→ Last submissions		
Submission	Time	Verdict
227009054	Oct/07/2023 15:33	Accepted
227007452	Oct/07/2023 15:19	Wrong answer on test 5