D. Vessels

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

There is a system of n vessels arranged one above the other as shown in the figure below. Assume that the vessels are numbered from 1 to n, in the order from the highest to the lowest, the volume of the i-th vessel is a_i liters.

Initially, all the vessels are empty. In some vessels water is poured. All the water that overflows from the i-th vessel goes to the $(i + 1)$-th one. The liquid that overflows from the n-th vessel spills on the floor.

Your task is to simulate pouring water into the vessels. To do this, you will need to handle two types of queries:

1. Add x_i liters of water to the p_i-th vessel;
2. Print the number of liters of water in the k_i-th vessel.

When you reply to the second request you can assume that all the water poured up to this point, has already overflown between the vessels.

Input

The first line contains integer n — the number of vessels ($1 \le n \le 2 \cdot 10^5$). The second line contains n integers $a_1, a_2, ..., a_n$ — the vessels' capacities ($1 \le a_i \le 10^9$). The vessels' capacities do not necessarily increase from the top vessels to the bottom ones (see the second sample). The third line contains integer m — the number of queries ($1 \le m \le 2 \cdot 10^5$). Each of the next m lines contains the description of one query. The query of the first type is represented as "$1\ p_i\ x_i$", the query of the second type is represented as "$2\ k_i$" ($1 \le p_i \le n$, $1 \le x_i \le 10^9$, $1 \le k_i \le n$).

Output

For each query, print on a single line the number of liters of water in the corresponding vessel.

Examples

input
2 5 10 6 1 1 4 2 1 1 2 5 1 1 4 2 1 2 2

output
4 5 8

input
3 5 10 8 6 1 1 12 2 2 1 1 6 1 3 2 2 2 2 3

output

```
7
10
5
```