

---

# The queue

Input file:            **A.in**  
Output file:         **A.out**  
Time limit:          1 second  
Memory limit:       64 megabytes

There is an interesting queue. Cashier of this queue is not a good one. In fact, he only sells the tickets only when the customer starts to abuse him.

Eventually, some *rude* people gets annoyed of it and goes straight to the front of the queue, to the cashier, to complain. And of course, the cashier has to sell the tickets to that *rude* person after that.

Of course, all the people who were ahead of that *rude* person starts expressing his/her dissatisfaction by saying some amount of bad words (fixed for each person).

Bekzhan was interested of how many bad words each of the *rude* person receive after he buys the tickets out of turn thinking he is above the law.

## Input

The first line contains a single integer  $N$  ( $2 \leq N \leq 5 \cdot 10^5$ ) — the number of events occurred.

Description of each events starts with a single integer  $type$  ( $1 \leq type \leq 2$ ).

If  $type = 1$ , then it is followed by an integer  $w$  ( $1 \leq w \leq 10^9$ ). It means that the new person came to the back of the queue, and his ID is the least positive number which wasn't used as an ID before. The fixed number of bad words he'd say is the number  $w$ .

If  $type = 2$ , then it is followed by an integer  $x$ . It means the person with ID  $x$  decides to be the *rude* one and buys the tickets out of turn. It's guaranteed that the person with ID  $x$  exists in the queue at that exact moment.

It's guaranteed that there will be at least one *rude* person.

## Output

For each event of  $type = 2$ , output the number of bad words he'd hear after he buys the tickets out of turn.

## Scoring

1.  $N \leq 20$ ,  $w \leq 1000$  — 10 points.
2.  $N \leq 10000$  — 40 points.
3.  $N \leq 500000$  — 50 points.

---

## Examples

A.in	A.out
2 1 1 2 1	0
8 1 8 1 1 1 9 2 2 1 2 1 4 2 5 1 3	8 19

## Note

In the first example, the person was the only one in the queue, and respectively he didn't hear any bad word.

In the second example, at first, people, who would say 8, 1 and 9 bad words (with ID-s 1, 2 and 3), respectively, arrive. Then, the person with ID 2 decides to buy the tickets out of turn, and will be complained by the person with ID 1 with 8 bad words. Then, new people arrive, who would say 2 and 4 bad words (with ID-s 4 and 5), respectively. After, the person with ID 5 decides to buy the tickets out of turn, and will be complained by the people with ID-s 1, 3, 4, with 19 bad words overall. And finally, the last person arrives with ID 6 ( $w$  is 3).