Task «Set»

Petya launches another startup. The business idea, as usual with Petya, is simple, brilliant, and promises a lot of profit. You work for Petya as a programmer, which means that you have to implement all his crazy ideas.

Today's idea is an assistant app for mathematicians. It allows you to store a set of integers and modify it. The app prototype will have only three functions:

- Add an integer x to the set. If this number is already in the set, the set does not change;

- Remove an integer x from the set. If this number is not in the set, the set does not change;

Calculate the sum of all numbers in the set. Initially, the set is empty. Help Petya get rich by implementing an application prototype that supports these operations.

Input format

The first line of the input contains a single integer n – the number of requests ($1 \leq n \leq 5 \cdot 10^5$).

Each of the next n lines contains a description of the next request. First, in the description there is an integer t – the request type ($1 \leq t \leq 3$):

- If $t = 1$, then an integer x follows, and this is a request to add x to the set;

- If $t = 2$, then an integer x follows, and this is a request to remove the number x from the set;

- If $t = 3$, then this is a request to calculate the sum of numbers in the set.

All added and removed numbers do not exceed 10^9 in absolute value.

Output format

For each query of the third type, print the sum of the numbers in the set on a separate line.

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Sample input:
```
7
1 3
1 4
3
1 3
3
2 4
3
```

Sample output:
```
7
7
3
```