Monkey and apples

Monkey Chris loves apples. That's why he has planted lots of apple trees. He does two types of operations on this trees.

- First operation `1 x y`: means counting ripe apple trees on interval [x+c, y+c].
- Second operation `2 x y`: means that all apples on interval [x+c, y+c] get ripe(edible).

C=0 in the beginning and becomes the answer of each query ("1" operation).

Input

Input begins with M (1 <= M <= 10^5) the number of operations. Afterwards M lines each of them is an operation ("1" or "2"). 1<=X+C; Y+C<=10^9.

Example

Input
```
3
2 5 8
2 7 10
1 1 10
```

Output
```
6
```

Explanation

3 queries. Apples gets ripe on intervals 5-8 and 7-10. There are totally 6 ripe apple-trees on interval 1-10 so answer to query is 6.