

Toast Flip!



Aakash likes to cook and thus decides to make toasts one day. He makes **N** toasts and butters them all on one side of the toast. Soon, he is bored and decides to play a game with the toasts.

He puts all toasts in a line; all either butter side up or butter side down. He then gives every toast a number from 1 to N, starting from the leftmost toast to the rightmost. Finally, he decides to play the game.

In this game there are **N** rounds. In the *i*-th round, every toast with number less than *i* is flipped. That is, every toast with value *K* is flipped if $K \leq i$. So if the toast was butter side up, it becomes butter side down and vice-versa.

Now Aakash needs to decide how many toasts will be butter side up or butter side down after he has finished playing the *N*th round. **S** is the number which decides whether Aakash needs to count the toasts that are butter side up or butter side down.

Input Format

The first line of input contains the number of test cases **T**. Then *T* test cases follow.

Each test case contains three integers, **Q**, **N** and **S**; the initial state of the toasts, the number of toasts Aakash makes and the final state of the toasts he needs to count respectively.

(If $Q == 1$, the toasts are all butter side up at the start. If $Q == 2$, the toasts are all butter side down at the start)

(If $S == 1$, Aakash needs to know how many toasts will be butter side up at the end of the *N*th round. If $S == 2$, he needs to know how many will be butter side down at the end of the *N*th round)

Constraints

$1 \leq T \leq 100$

$1 \leq N \leq 10^9$

Output Format

For each test case, output one integer containing the number of toasts that are butter side up.

Sample Input 0

```
3
1 8 1
2 4 1
1 5 2
```

Sample Output 0

```
4
2
3
```