

Menanam Bom

Time limit: 1s

Memory limit: 256MB

Deskripsi

Perang antara Nori dan Rino akan berlangsung beberapa hari lagi. Untuk mempersiapkan hal itu, Rino akan menanam beberapa bom di perbatasan wilayah untuk mencegah pasukan Nori masuk ke daerah Rino. Penanaman bom akan dilakukan oleh pembantu Rino. Rino akan memerintahkan pembantunya untuk menanam N buah bom pada lokasi L dengan perintah berikut.

```
set L N
set loc_1 6
```

Agar Rino tidak lupa dengan jumlah bom pada lokasi tertentu, dia memerintahkan pembantunya untuk mengawasi jumlah bom pada lokasi tersebut. Rino akan memerintahkan pembantu P untuk mengawasi lokasi L dengan perintah berikut.

```
set * P & L
set * ser_1 & loc_1
```

Nantinya, Rino dapat mengubah lokasi yang harus diawasi pembantu P menjadi ke lokasi L dengan perintah berikut.

```
chg * P & L
chg * ser_1 & loc_2
```

Rino juga dapat mengubah jumlah bom yang telah ditanam pada lokasi L atau pada lokasi yang diawasi oleh pembantu P dengan perintah berikut.

```
chg L N
chg loc_1 10
chg * P N
chg * ser_1 2
```

Kemudian, Rino ingin mengetahui berapa jumlah bom pada lokasi yang diawasi oleh salah satu pembantunya. Rino akan memerintahkan pembantu P untuk menunjukkan jumlah bom dengan perintah berikut.

```
get * P
get * ser_1
```

Rino akan memberikan sebanyak T buah perintah kepada pembantunya. Bantulah pembantu Rino agar semua perintahnya terlaksanakan!

Format Masukan

Baris pertama berisi sebuah bilangan bulat T yang menyatakan banyak perintah Rino. N baris berikutnya berisi perintah C dan parameternya sesuai dengan deskripsi.

Batasan

- $1 \leq T \leq 100$
- $C \in \{\text{set, chg, get}\}$
- $1 \leq |L|, |P| \leq 20$
- $1 \leq N \leq 10^9$
- L dan P dijamin tidak memiliki spasi.
- Semua L dan P dijamin unik.
- Dijamin terdapat perintah `set L N` sebelum `set * P & L`, `chg * P & L`, dan `chg L N`.
- Dijamin terdapat perintah `set * P & L` sebelum `chg * P & L`, `get * P`, dan `chg * P N`.

Format Keluaran

Keluarkan jumlah bom ketika terdapat perintah `get` .

Contoh Masukan 1

```
4
set north 5
set * Heinz & north
chg north 10
get * Heinz
```

Contoh Keluaran 1

```
10
```

Contoh Masukan 2

```
6
set east 15
set * Timo & east
set * Niklas & east
chg * Timo 3
get * Niklas
get * Timo
```

Contoh Keluaran 2

```
3
3
```

Contoh Masukan 3

```
7
set west 15
set south 10
set * Timo & west
chg west 3
get * Timo
chg * Timo & south
get * Timo
```

Contoh Keluaran 3

```
3
10
```

Bomb Planting

Time limit: 1s

Memory limit: 256MB

Description

The war between Nori and Rino will start in a few more days. To prepare for that, Rino plans to plant some bombs on the territory border. Rino calls his servants to help him plant the bombs. To order his servant to plant N bombs on location L , Rino will use the following command.

```
set L N
set loc_1 6
```

So that Rino will not forget the number of bombs in some locations, Rino will order some of his servants to keep track of the number of bombs planted in that location. To order his servant P to keep track of location L , Rino will use the following command.

```
set * P & L
set * ser_1 & loc_1
```

Later, Rino could order his servant P to keep track of another location L using the following command.

```
chg * P & L
chg * ser_1 & loc_2
```

Rino could change the number of bombs that have already been planted in some locations as well. To order his servant to change the number of bombs in location L or the location where servant P is keeping track of, Rino will use the following command.

```
chg L N
chg loc_1 10
chg * P N
chg * ser_1 2
```

Sometimes, Rino will ask one of his servants about the number of bombs in the location he has been keeping track of. To ask his servant P about that, Rino will use the following command.

```
get * P
get * ser_1
```

Rino will give T commands to his servants. Help his servants to complete all of Rino's commands!

Input Format

The first line contains an integer T , denoting the number of Rino's commands. The next T lines contain command C and their parameters.

Constraints

- $1 \leq T \leq 100$
- $C \in \{\text{set, chg, get}\}$
- $1 \leq |L|, |P| \leq 20$
- $1 \leq N \leq 10^9$
- There is no space in L and P .
- All L and P are unique.
- Guaranteed there will be `set L N` before `set * P & L`, `chg * P & L`, and before `chg L N`.
- Guaranteed there will be `set * P & L` before `chg * P & L`, `get * P`, and before `chg * P N`.

Output Format

Print the number of bombs after `get` command.

Sample Input 1

```
4
set north 5
set * Heinz & north
chg north 10
get * Heinz
```

Sample Output 1

```
10
```

Sample Input 2

```
6
set east 15
set * Timo & east
set * Niklas & east
chg * Timo 3
get * Niklas
get * Timo
```

Sample Output 2

```
3
3
```

Sample Input 3

```
7
set west 15
set south 10
set * Timo & west
chg west 3
get * Timo
chg * Timo & south
get * Timo
```

Sample Output 3

```
3
10
```