

Boring

After the make-up examine,Tiantian is bored because he needn't review *digital circuit* now.So he decides to calculate the number of people in the queue.What a boring boy!

There are three operations of the queue:

In x: push x($x \leq 10000$) in the end of the queue.

Out: write out the first element of the queue and erase it.If the queue is empty,write out -1.

Count: return the length of the queue.

Input

The first number T($T \leq 20$) means the number of tests.

Each test contains a single number N($N \leq 1000$) means the number of operations.Following n lines describe the operation of the queue.

Output

For each Out and Count operation,write out its expected answer.

Sample Input

```
2
10
Count
Count
In 9035
Out
Out
In 9809
In 4983
Out
Count
Out
10
In 1589
Count
Count
Count
Count
In 7173
```

Count
In 4567
In 120
Out

Sample Output

0
0
9035
-1
9809
1
4983
1
1
1
1
2
1589