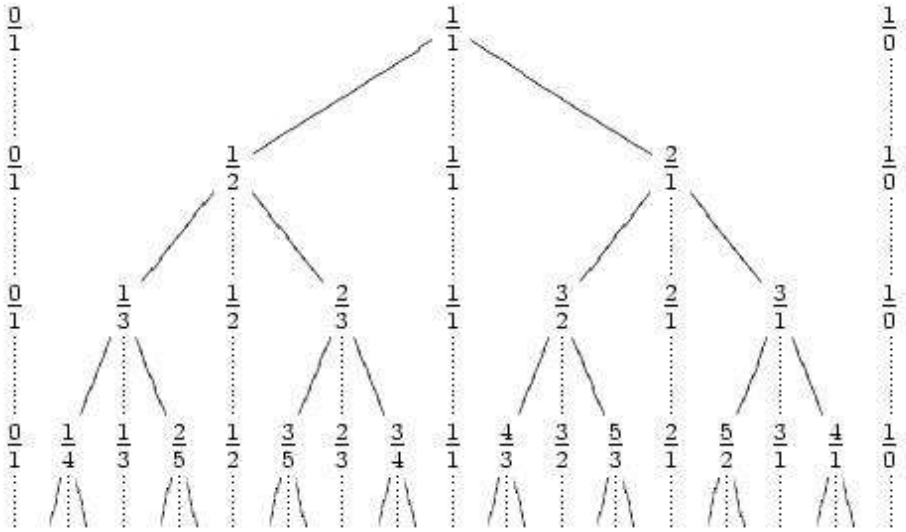
In number theory, the Stern-Brocot tree is a method of listing all non-negative rational numbers as well as a point representing infinity (here represented formally as 1/0).

The tree may be created by an iterative process. It is easiest to describe as a list. Beginning with the list {0/1, 1/0} representing 0 and infinity respectively, one places between any two fractions the mediant of the fractions (the mediant of a/c and b/d is $(a + b)/(c + d)$). The first few steps of this process yield:

{0/1, 1/0}
{0/1, 1/1, 1/0}
{0/1, 1/2, 1/1, 2/1, 1/0}
{0/1, 1/3, 1/2, 2/3, 1/1, 3/2, 2/1, 3/1, 1/0}

This process can be represented as a tree where each row corresponds to the new numbers added at each step.



From Wikipedia

> The position of a fraction in the tree can be specified as a path consisting of L(left) an R(right) moves along the tree starting from the top (fraction 1/1). Your have to find a fraction by a given path.

Input

The first line contains integer N ($0 < N \leq 10000$), it is number of tests. On next N lines there is a path in the tree. Path is the string if maximum length of 90 characters consisting from characters '`L`' or '`R`'.

Output

For each test case print line formatted like this: 'a/b'. Where a is numerator and b is denominator of the fraction.

Sample Input

```
3
RL
RLR
RRL
```

Sample Output

```
3/2
5/3
5/2
```