



COMPETITIVE

# PROG-A-THON

## 6: Space Friction

**Level:** intermediate/difficult

**Time limit:** 2.000 seconds

A new study shows a remarkable effect created by the interaction between groups of asteroids. It shows that the rotation of asteroid affects the rotation of another. In a simplified model, the groups of asteroids can be represented as circles on a plane, which turn in a direction. The model consists of  $n$  asteroids, numbered  $1, 2, \dots, n$ . Two asteroids cannot overlap, but they can touch. If one asteroid touches another, its rotation affects the rotation of the other (in the same way a gear affects another gear when they touch).

To see how much effect the rotation of one has on the other, we only rotate asteroid 1 in the model. We make it rotate exactly one turn per minute, clockwise (to the right). All other asteroids have no rotation. It is up to you to compute the rates of the other group of asteroids' movement.

### Input

The first line of the input contains the number of test cases  $t$ . Each test case starts with a line which specifies the number of asteroids  $n$  in the model with ( $1 \leq n \leq 1000$ ). The upcoming  $n$  lines contain three integers:  $x, y$  and  $r$  with ( $-10.000 \leq x, y \leq 10.000; 1 \leq r \leq 10.000$ ).  $(x, y)$  denote the Cartesian coordinates of the asteroid's center and  $r$  is its radius.

### Output

For each test case, output  $n$  lines, each describing the movement of one asteroid, in the same order as in the input. Output either **p/q right** or **p/q left** for every asteroid, where  $p/q$  is an irreducible fraction which represents the number of turns per minute. You can just output  $p$  if  $q$  is 1. Output **still** if a group does not move.

### Sample input 1

```
1
5
0 0 6
6 8 4
-9 0 3
6 16 4
0 -11 4
```

### Sample output 1

```
1 right
3/2 left
2 left
3/2 right
still
```