

## Problem C

# Gumo's Tea Pattern

Time limit: 3 seconds

Memory limit: 1024 megabytes

### Problem Description

In a mystical land in the Far East, there exists a unique beverage shop known as MOGU Tea House. This tea house serves only one iconic drink called “TodayFirstQQ”. Each cup of “TodayFirstQQ” is exactly 1 liter (1000 cubic centimeters) in volume, made up of 500 cc of tea and 500 cc of boba.

Gumo, a loyal customer of MOGU Tea House, is utterly fascinated by this drink. He drinks it in sips of exactly 10 cc each, and may take up to 100 sips to finish the drink. However, he immediately stops once either the tea or the boba has been fully consumed —even if he has not reached 100 sips. Even more remarkably, Gumo follows a strict and consistent sipping pattern:

He always drinks tea in a repeating cycle determined by the amounts of tea he drinks in his first three sips. For example, if his first three sips contain 0, 3, and 9 cc of tea respectively, then he continues drinking in that exact pattern: 0, 3, 9, 0, 3, 9, … until the drink is finished or one ingredient runs out. Since each sip always totals 10 cc, the amount of boba in each sip can be easily calculated by subtracting the tea volume from 10. So in this case, the boba volumes would be:  $10-0 = 10$ ,  $10-3 = 7$ ,  $10-9 = 1$ , forming the repeating pattern: 10, 7, 1, 10, 7, 1, ….

Gumo stops immediately once either the tea or the boba is fully consumed. Crucially, if the remaining amount of an ingredient is less than the required amount for the current sip:

- Gumo drinks all of the remaining insufficient ingredient (bringing it to 0).
- He still drinks the full scheduled amount of the other ingredient for that sip.
- Then, the drinking session ends.

To find the most perfect sipping pattern, Gumo wants you to write him a program. Given the tea volumes of his first three sips, determine how many cubic centimeters of tea or boba remain when the other component has been fully consumed.

### Input Format

The first line contains an integer  $N$  representing the number of drinks Gumo wants you to simulate ( $1 \leq N \leq 1,000$ ). The next  $N$  lines each contain three integers between 0 and 10 (inclusive), representing the volumes of tea (in cc) that Gumo drinks in his first three sips for a single cup of “TodayFirstQQ”.

## Output Format

For each drink, output one line. If tea is fully consumed before boba which remaining  $x$  cc, output ‘Remaining  $x$  cc Boba’. If boba is fully consumed before tea which remaining  $y$  cc, output ‘Remaining  $y$  cc Tea’. If both tea and boba are consumed at exactly the same time, output ‘Finished at the same time’.

## Technical Specification

- $1 \leq N \leq 1,000$
- The volumes of tea (in cc) that Gumo drinks in his first three sips for a single cup of “Today-FirstQQ” are between 0 and 10 (inclusive).

### Sample Input 1

```
3
0 3 9
5 7 3
10 10 10
```

### Sample Output 1

```
Remaining 173 cc Tea
Finished at the same time
Remaining 500 cc Boba
```