Google Code Jam '11 Round 1A Problem A - FreeCell Statistics

Time limit: 60.0s **Memory limit:** 1G

I played D $(D > 0)$ games of FreeCell today. Each game of FreeCell ends in one of two ways -- I either win, or I lose. I've been playing for many years, and have so far played G games in total (obviously, $G \geq D$).

At the end of the day, I look at the game statistics to see how well I have played. It turns out that I have won exactly P_D percent of the D games today, and exactly P_G percent of G total games I had ever played. Miraculously, there is no rounding necessary -- both percentages are exact! Unfortunately, I don't remember the exact number of games that I have played today (D), or the exact number of games that I have played in total (G). I do know that I could not have played more than N games today $(D \leq N)$.

Are the percentages displayed possible, or is the game statistics calculator broken?

Input Specification

The first line of the input gives the number of test cases, T. T lines follow. Each line contains 3 integers -- N, P_D and P_G.

Output Specification

For each test case, output one line containing `Case #x: y`, where x is the case number (starting from 1) and y is either `Possible` or `Broken`.

Limits

$0 \leq P_D \leq 100$;

$0 \leq P_G \leq 100$;

Memory limit: 1 GB.

Small Dataset

$1 \leq T \leq 100$;

$1 \leq N \leq 10$;

Time limit: 30 seconds.

Large Dataset

$1 \leq T \leq 2000$;

$1 \leq N \leq 10^{15}$;

Time limit: 60 seconds.

Sample Input

```
3
1 100 50
10 10 100
9 80 56
```

Sample Output

```
Case #1: Possible
Case #2: Broken
Case #3: Possible
```

In Case #3, I could have played 5 games today $(D = 5)$ and 25 games in total $(G = 25)$, and won 4 games today $(80\% \text{ of } 5)$ and 14 games in total $(56\% \text{ of } 25)$.

Note

This problem has different time limits for different batches. If you exceed the Time Limit for any batch, the judge will incorrectly display `>60.000s` regardless of the actual time taken. Refer to the **Limits** section for batch-specific time limits.