7901 Bet

The *Codejamon* game is on fire! Fans across the world are predicting and betting on which team will win the game.

A gambling company is providing betting odds for all teams; the odds for the i-th team is $A_i : B_i$. For each team, you can bet any positive amount of money, and you do not have to bet the same amount on each team. If the i-th team wins, you get your bet on that team back, plus $\frac{B_i}{A_i}$ times your bet on that team.

For example, suppose that there are two teams, with odds of 5:3 and 2:7 and you bet \$20 on the first team and \$10 on the second team. If the first team wins, you will lose your \$10 bet on the second team, but you will receive your \$20 bet back, plus $\frac{3}{5} \times 20 = 12$, so you will have a total of \$32 at the end. If the second team wins, you will lose your \$20 bet on the first team, but you will receive your \$10 bet back, plus $\frac{7}{2} \times 10 = 35$, so you will have a total of \$45 at the end. Either way, you will have more money than you bet (\$20+\$10=\$30).

As a greedy fan, you want to bet on as many teams as possible to make sure that as long as one of them wins, you will always end up with more money than you bet. Can you figure out how many teams you can bet on?

Input

The input starts with one line containing exactly one integer T, which is the number of test cases.

Each test case starts with one line containing an integer N: the number of teams in the game. Then, N more lines follow. Each line is a pair of numbers in the form 'A_i:B_i' (that is, a number A_i, followed by a colon, then a number B_i, with no spaces in between), indicating the odds for the i-th team.

Output

For each test case, output one line containing '`Case #`x`:` y', where x is the test case number (starting from 1) and y is the maximum number of teams that you can bet on, under the conditions specified in the problem statement.

Limits:

- $1 \leq T \leq 100$.
- $1 \leq N \leq 100$.
- $0 < A_i, B_i < 100$.
- Both A_i and B_i have at most 3 digits after the decimal point.

Note: In sample case `#1`, one optimal strategy is to bet 1.5 dollars on the first team and 1.5 dollars on the third team. If the first team wins, you will get $1.5 + 1.5 \times (1.1/1) = 3.15$ dollars back, and if the third team wins, you will get $1.5 + (1.7/1.5) \times 1.5 = 3.2$ dollars back. Both of these are higher than the total money that you bet ($1.5 + 1.5 = 3$ dollars).

However, there is no way to bet on all three teams and be guaranteed a profit.

Sample Input

```
1
3
1:1.1
1:0.2
1.5:1.7
```

Sample Output

```
Case #1: 2
```