

Problem E. Bet

Input file: Standard Input
Output file: Standard Output
Time limit: 1 second

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.

Sample input and output

Sample Input	Sample Output
1 3 1:1.1 1:0.2 1.5:1.7	Case #1: 2

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.