1027 – A Dangerous Maze

You are in a maze; seeing **n** doors in front of you in beginning. You can choose any door you like. The probability for choosing a door is equal for all doors.

If you choose the $\mathbf{i}^{th}$ door, it can either take you back to the same position where you begun in $\mathbf{x_i}$ minutes, or can take you out of the maze after $\mathbf{x_i}$ minutes. If you come back to the same position, you can't remember anything. So, every time you come to the beginning position, you have no past experience.

Now you want to find the expected time to get out of the maze.

Input

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

Each case contains a blank line and an integer **n (1 ≤ n ≤ 100)** denoting the number of doors. The next line contains **n** space separated integers. If the $\mathbf{i}^{th}$ integer $\mathbf{(x_i)}$ is positive, you can assume that the $\mathbf{i}^{th}$ door will take you out of maze after $\mathbf{x_i}$ minutes. If it's negative, then the $\mathbf{i}^{th}$ door will take you back to the beginning position after $\mathbf{abs(x_i)}$ minutes. You can safely assume that $\mathbf{1 \le abs(x_i) \le 10000}$.

Output

For each case, print the case number and the expected time to get out of the maze. If it's impossible to get out of the maze, print **'inf'**. Print the result in **p/q** format. Where **p** is the numerator of the result and **q** is the denominator of the result and they are relatively prime. See the samples for details.

Sample Input	Output for Sample Input
3 1 1 2 -10 -3 3 3 -6 -9	Case 1: 1/1 Case 2: inf Case 3: 18/1