C Chicken Lover

Abir loves to eat. Every time he visits a restaurant he wants to eat a chicken item. But chicken item may not be always available. In each day he visits **m** restaurants consecutively. Each restaurant (i = 1….m) can make $\mathbf{n_i}$ different items (Number of Chicken item is exactly 1). But in a single day each restaurant prepares exactly $\mathbf{k_i}$ items (chosen randomly from $\mathbf{n_i}$ items).

Find expected number of chicken items Abir can eat in a single day.

Input

Input starts with an integer **T (≤ 125)**, denoting the number of test cases. Each case starts with a line containing an integer **m (1≤m≤10000)** which denotes number of visiting restaurants. Then in the following line there will be **m** pair of numbers $\mathbf{n_i}$ and $\mathbf{k_i}$ (**1≤i≤m, 1≤n_i≤20, 1≤k_i≤n_i)**.

Output (Illustration in next page)

For each case, print expected number of chicken items Abir can eat in a single line in the format **P/Q,** where P and Q are relatively prime (i.e. no common factor > 1, between **P** and **Q**).

Sample Input	Output for Sample Input
3 1 1 1 2 2 1 2 1 1 3 2	Case 1: 1/1 Case 2: 1/1 Case 3: 2/3

Problem setter: Mohammad Hafiz Uddin, Special Thanks: F. A. R. Rahman Chowdhury

Explanation for Sample Case

In the first case, total no of item is one (one chicken item) and probability of getting 1 chicken item is one. So expected number of chicken item is 1.

In the second case, probability of getting 1 chicken item is ½ and probability of getting 2 chicken items is ¼. So expected no of chicken item is 1 x ½ + 2 x ¼ = 2/2 = 1/1.