Contest time extended! There were a few configuration issues with the server. So we had to restart it. We appologize for the inconvenience and are extending the contest time for an hour.

D. King of Nothing

Score: 1

CPU: 1s
Memory: 1024MB

This time Mr. Fallen is visiting the court of the King of Nothing. In spite of his frustrating title, the King of Nothing has a lot of money. So he ordered the Fallen to bring N boxes, each with X golden coins for him. Mr. Fallen, being an evil, put some counterfeits in each of the boxes. After doing that he remembers the learning of the probability theory course he completed under supervision of great Broken Arrow. Broken arrow asks him in his mind, "What's the probability that you'll not be caught if King of Nothing checks exactly one coin from each of the boxes". In other words, King of Nothing opens a box, chooses a coin randomly from the box, tests it and if the chosen coin is a counterfeit, Fallen is in trouble. King of nothing can open boxes in any order and the probability of any coin in a box to be chosen is equal. He will open all the boxes exactly once. Tell Mr. Fallen the probability that he will not be in any danger.

Mr. Fallen was very poor in probability theory during his student life and still he is. So he requests you to find the answer for him while he spends the money he earned by cheating on Mr. King of Nothing.

Input

The first line of the input contains an integer T (T ≤ 10) denoting the number of test cases. Each of the following T cases starts with a pair of space separated positive integers N and X where N is the number of boxes and X is the number of coins in each of the N boxes. The following line has N space separated positive integers, where the ith of them denotes the number of counterfeit coin in the ith box put by Mr. Fallen. Note that, $1 \le X, N \le 100000$. Number of counterfeit coin in any of the boxes doesn't exceed X.

Output

For each test case, print the output in the format, "Case C: (A % M)/(B % M)" (quote for clarity), where A/B is the answer for the test case, A, B are relative prime, C is the case number and M = 1000000007. If A/B is 0 or 1, simply print the integer. Here % means the modulus or modulo operator.

For exact output format please check sample input/output section.

Sample

Input	Output
3	Case 1: 1/2
2 2	Case 2: 63/125
0 1	Case 3: 0
3 10	
3 2 1	
2 1	
1 1	

NCPC 2014 Preliminary

2:54:33

You are participating in this contest

Submit

Language

C ▼

Source

Choose..

Submit

Powered by: (http://muktosoft.com)

Partners: (http://uva.onlinejudge.org) (http://lightoj.com)