

Arab Cleaning Masters

-ACM- Arab Cleaning Masters is a famous company established in 1994. It's one of the most known cleaning companies that clean houses, cafes, restaurants, etc...

ACM workers love their company a lot that's why it's famous. ACM has a very simple hierarchy divided into workers (cleaners) and a manager all of them get their salary monthly.

The manager sent three workers to clean a house near Abasyya. Each worker should work 2 hours. The problem is that the third worker was very tired and had to go to the hospital. So, the others (the remaining 2 workers) decided to do his job.

The first person worked 3 hours and the second worked 3 hours, the manager came to see their work. He was impressed and happy because the job was perfectly done. So, he decided to give them 80 Dollars as a gift.

Now, the 2 workers want to share this 80 Dollars fairly. So, after some calculations they found that both of them will take 40 Dollars.

Now the manager wants to automate this process, how?!

He asks you to make a program that calculates this gift fairly between workers.

Note:

Regardless the number of absent workers, the job must completely be finished.

Input

Your program will be tested on one or more test cases. The first line of input will be a single integer T ,

The number of test cases ($1 \leq T \leq 20$). Each test case starts with two integers N ($1 < N < 50$) number of workers and H ($0 < H \leq 6$) number of working hours.

The next line contains the number of absent workers M ($0 < M < N$).

This is followed by N numbers representing the final working hours for each person (The first number represents the first worker's working hours, the second represents the second worker's working hours, etc...) and of course 0 represents the working hours of the absent workers.

Each test case ends with 2 integers G ($0 \leq G < 1000$) (given gift) and P ($0 \leq i < N$) the index of a certain worker that the user want to know its share of the gift.

Output

For each test case, print "Case_#i:_X" where "X" is the Pth worker's share of the given gift G (The answer should be formatted and approximated to three decimal places as shown in sample output), "i" is the number of the test case (starting with 1) and "_" is a white space. Each output should be printed in a separate line.

Example

Input:

2
3 2
1
3 3 0
80 1
3 6
1
9 0 9
120 0

Output:

Case #1: 40.000

Case #2: 60.000