Prizes

Input file:	`fouad.in`
Output file:	`stdout`
Time limit:	15 seconds
Memory limit:	1024 megabytes

Mohamed Fouad is the deputy regional director of the ACPC. While planning for the region in Sharm El-Sheikh 2013 he faced a problem as the funds collected by the fundraising team is a little bit lower than what he was expecting so he decided to cancel some of the prizes he was planning to buy for the winning teams. Since prizes were bought from USA, It should pass through the custom duties to be able to enter Egypt. The custom duties of an item depends on the number of items imported so the total money paid for item i is **price[i]** + **customs[i]* (n-1)** where **n** is the number of items bought. Given the prices , customs and the budget what is the maximum number of prizes he can buy for the teams.

Input

Your program will be tested on one or more test cases. The first line of the input will be a single integer **T**, the number of test cases ($1 \leq \mathbf{T} \leq 100$). Followed by **3 * T** lines, 3 lines per test case , the first line contains two integers **M** and **B** , the number of available items for purchase and the maximum budget ($1 \leq \mathbf{M} \leq 10^6$) , ($0 \leq \mathbf{B} \leq 10^7$) , the second line contains M integers which is the prices for each prize where **price[i]** is the price for prize i , ($1 \leq$ **price[i]** $\leq 10^3$) the third line contains M integers which is the customs taxes for each prize where **customs[i]** is the custom taxes for prize i ($1 \leq$ **customs[i]** $\leq 10^3$).

Output

For each test case print a single line containing "Case n:" (without the quotes) where n is the test case number (starting from 1) followed by a space then **x** where x is maximum number of prizes Fouad can buy for the teams.

Examples

fouad.in	stdout
3 6 55 20 16 6 16 13 11 13 1 12 16 9 16 2 38 14 19 14 11 6 1000 19 19 7 5 3 1 4 7 17 15 8 2	Case 1: 2 Case 2: 1 Case 3: 6

Note

- In the first test case fouad may buy 2 prizes number 2 and 3 (1-based) with total cost (16 + 1*1) + (6+12*1) = 35

- In the second test case fouad may buy only the first prize with total cost (14 + 14*0)= 14 or he can buy the second prize with total cost (19 + 11*0) = 19

- In the third test case due to the big budget fouad could buy all the six prizes