Who Stole My Burrito?

Filename: `burrito`

Melissa and Rob have ordered chicken and steak for a burrito bar for the SI@UCF campers and guests. Unfortunately, some students took too much meat, leaving none for the last guests!

Given how many cubes of chicken and steak have been ordered, as well as the number of cubes each dinner attendee wants, determine how many cubes of each the last person in line receives. Assume that each student takes the desired number of cubes of each meat as long as the required number is available. If the required number is not available, a student will take all of that particular meat that is available.

Input

The first line will contain a single positive integer, t, ($t \leq 100$), specifying the number of input cases.

The first line of each input case will contain three space-separated positive integers, c ($c \leq 10000$), s ($s \leq 10000$), and n ($n \leq 100$), representing the number of cubes of chicken ordered, the number of cubes of steak ordered, and the number of attendees of the dinner, respectively.

The following n lines will contain two space-separated non-negative integers each: c_i ($c_i \leq 100$) and s_i ($s_i \leq 100$), the number of cubes of chicken and steak, respectively, desired by the i^{th} ($1 \leq i \leq n$) student. These lines will be in the order the dinner attendees are standing to receive food.

Output

For each input case, output two integers separated by a space: the number of cubes of chicken and the number of cubes of steak, respectively, that the last person in line got.

Samples

Input	Output
2 30 40 3 20 20 20 20 20 20 100 50 4 10 20 15 10 13 15 10 10	0 0 10 5