UVa Online Judge

11760 Brother Arif, please feed us!

Brother Arif is a great problemsetter. He loves grid. Also, he loves light. That's why the other problemsetters believe that asking him to throw a feast is always right. Unfortunately Brother Arif himself doesn't think so. Instead of all the naggings and reasons going on around him, he stays in his chair with dreamy eyes and lovingly thinks about newer ways of placing lights inside a 2D grid. Now, it's time to make your stand for the deprived problemsetters' right and force Brother Arif to their pleas.

Now, the problemsetters have all gathered inside a room. The floor of this room is shaped like a 2d Rectangular grid consisting of many cells. Any of the problemsetters can stand on a cell. A cell has enough place for only one people and everyone must occupy exactly one cell at a time. Brother Arif, standing on one of these cells, can move to one of the four adjacent cells just once or he may not move at all. He may not leave the grid, however. The other problemsetters are standing on other cells. With the help of their new telecatching device, they can capture anyone standing at the same row or column irrespective to his distance. So, now you are given the positions of the problemsetters and are asked to figure out if Brother Arif can escape from getting captured (and thus throwing a huge party.)

Input

The input file has multiple test cases. Each test case begins with 3 integers, R ($1 \leq R \leq 10000$), C ($1 \leq C \leq 10000$) & N ($1 \leq Ne2000$). R & C are the number of rows & columns in the grid while N denotes the number of problemsetters present on the room. $N + 1$ lines follow the first line. Each of the next N lines has 2 integers, r ($0 \leq r < R$) & c ($0 \leq c < C$), position of a problemsetter. For your reference, the upper left corner of the cell has $(0, 0)$ while the lower left one has $(R-1, 0)$ and the lower right one has $(R-1, C-1)$ co-ordinate. The last line gives the co-ordinate of Brother Arif in the same format. The last test case will be followed by a case with $R = C = N = 0$. This case should not be processed.

Output

For each test case, print a line. This line starts like, '`Case` X`:` ', where, X is the case number. After that print a string based on Brother Arif's destiny. If Brother Arif can find a cell where none else can catch him, print '`Escaped again! More 2D grid problems!`'. If someone can capture him no matter in which cell he goes, print '`Party time! Let's find a restaurant!`'

Sample Input

```
5 5 2
0 1
4 2
1 2
5 5 3
0 1
4 2
4 3
1 2
0 0 0
```

Sample Output

```
Case 1: Escaped again! More 2D grid problems!
Case 2: Party time! Let's find a restaurant!
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