# IRON MAN IN ANOTHER MISSION

You all must know about Iron-man. He has a robot suit which has incredible robotic power.

The Alien of the planet X send a space-ship and set it in Mars to destroy our Earth.

Hearing this, Iron-man went to the Mars to destroy the space-ship. He saw that the space-ship is something like a 2D grid. He sets some special bomb in the space-ship to destroy whole space-ship. The bomb has a unique property that it can destroy along the row, the column, and diagonals with its co-ordinate.

In the picture below there is a [4*6] 2D grid where a bomb is set in the co-ordinate (2, 3) which can destroy the colorful co-ordinates.
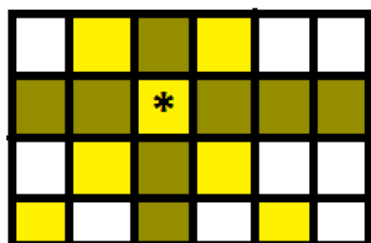
You are given a [R*C] 2D-grid(R is the row number and C is column number) specifying the space-ship and the co-ordinates of K bombs. You have to determine if the space-ship is fully destroyed or not. Space-ship is fully destroyed means it's all co-ordinates is destroyed.

INPUT

Input start with a line containing single integer T (1<=T<=100) which means the number of test cases. Each case start with three integers R, C (1 <= R, C <= 1000) and K (0 <=K <= min(R*C, 100000). The next K-lines of each case, contains two integers X (1 <= X <= R) and Y (1 <= Y <= C) which determine the co-ordinates of bombs. (Data base is huge, use faster I/O methods)

OUTPUT

For each case of input you have to print the case number and then print "YES" without quotes if the space-ship is fully destroyed, otherwise print "NO" without quotes.

Sample Input	Output for Sample Input
4	Case 1: YES
3 3 2	Case 2: YES
1 1	Case 3: NO
3 3	Case 4: NO
3 3 1	
2 2	
4 4 1	
2 2	
4 4 2	
1 4	
4 4	

N.B. "Database is huge, use faster I/O".

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