

Problem C – Queens

As little Long grows up and enters the second grade, he starts to interest in chess. In this game, the queen is the most powerful piece, able to move any number of unoccupied squares vertically, horizontally, or diagonally. At the same time, a queen is able to capture an enemy by occupying the square on which an enemy piece sits, as long as there is no other piece between the queen and the captured piece.

In other words, if a queen is placed in cell (X, Y) (X -th row from the top, Y -th column from the left), it can move to (or capture the piece in the cell) the following cells: $(X, Y + k)$, $(X, Y - k)$, $(X + k, Y)$, $(X - k, Y)$, $(X + k, Y + k)$, $(X + k, Y - k)$, $(X - k, Y + k)$, $(X - k, Y - k)$ as long as there is no other piece between the queen's position and the destination, exclusively. Obviously, the queen cannot move outside the board.

A cell is called safe if it is empty and we can put an enemy piece there and there is no queen can capture it in 1 move.

Given a chessboard of m rows and n columns ($1 \leq m, n \leq 100$) and k queens on the board, your task is to count the number of safe cells.

Input

The first line contains an integer T ($T \leq 50$), the number of test data.

T blocks of test data follow, each starts with a line contains three integers m, n, k . Then k lines follow, each line contains two numbers X, Y which are the positions of a queen. All the queens are placed in different cells.

Output

T lines, each line contains one number which is the answer of a test data.

Sample

Sample input	Output for sample input
2	4
4 4 1	2
2 2	
4 4 2	
2 2	
3 3	