Online Assignment on Graph Traversal

Section: C1 + C2   Mark: 10   Time: **20** Minutes

There are some squares which are called **death squares,** and we don't want our riders to be dead.

So, our riders can't stay in those squares at any time of their movements.

In such a scenario, return the minimum total moves that are needed to move them all to the same square.

Input:
The first line of input contains three integers n, m and q ($1 \le n \le 100, 1 \le m \le 100, 1 \le q \le n*m$) — the number of rows, the number of columns and the number of k-rider on the chessboard.

The following q line each has **three** integers x, y, and k — (x,y) the coordinates of the rider, and k is the number of maximum jumps this k-rider can make in a single move.

The next line contains an integer, d — the number of death squares.
The following d line each has **two** integers x, y — (x,y) the coordinates of the death square.

Here (x,y) are 0-indexed. Please refer to the sample IO for a better understanding of the input.

Output:
Output the total minimal number of moves, if we can move all the k-riders to the same square. Else print -1.

Input	Output
3 4 2 0 0 1 0 1 3 2 1 2 1 3	2
3 4 2 0 0 1 0 1 3 2 2 1 2 0	-1
3 4 2 0 0 1 0 1 1 2 2 0 1 3	5