Problem O: Wood Game

Time limit: 2s; Memory limit: 512 MB

Quang and Tung are now working at a wood factory. The factory's electrical power system has N single outlets, each of them is either negative (-) or positive (+) type. In the factory there is a cut-and-union machine C with two electrical jacks A and B. Inside the machine, a wood panel of size $X \times Y$ are waiting to be solved (X and Y are **odd numbers**). If A and B are in the different types of outlet (.i.e - + or + -), C will work as a cut machine: In one step, it can cut a panel into two panels such that they are both rectangles with integer sides' length (the positions and directions of panels are kept). If A and B are in the same type of outlet (.i.e + + or - -), C will work as an union machine: In one step, it can union two neighbor panels into a panel such that the panel is a rectangle (the positions and directions of panels are kept).

As world finalists, Quang and Tung usually have different views about a unique problem. They can't reach an agreement on how to use the machine. There are K steps that applied to the panel, but now Quang and Tung stop working because of disagreement. Instead of hit/kick the others, they decided to play a game to avoid the conflict:

- They draw m directed edges, each of them connects two outlets such that there is no cycle (.i.e outlets and edges form a **D**irected **A**cyclic **G**raph)
- Initialize, jack A is in a-th outlet, jack B is in b-th outlet, the panel was applied by K steps before starting the game.
- They play in alternate turns. Quang plays first.
- In one turn, player can choose one of three action:
    - Move jack A down to a new outlet (.i.e they can move jack A from u-th outlet to v-th outlet if (u, v) is an edge)
    - Move jack B up to a new outlet (.i.e they can move jack B from v-th outlet to u-th outlet if (u, v) is an edge)
    - Use machine C to apply a legal step to the panel
- The one who can't make a legal turn loses the game.

- Quang wonders if he can win the game or not, if they are both intelligent. Please help him.

Input

- First line contains an integer T is the number of test cases. Each test case is described in some lines.
- First line contains 4 integers N, M, a, b $(1 \leq a, b \leq N \leq 10^5; 0 \leq M \leq 10^5)$.
- The second line contains a string of length N, the i-th character is either + or - describe the type of i-th outlet.
- Each of next M lines contains 2 integers u, v means they draw an edge from u to v $(1 \leq u, v \leq N)$. It is guaranteed that there are no cycles.

- The next line contains 3 integers X, Y, K $(0 \leq K \leq 10^5; 1 \leq X, Y \leq 10^5; X\ Y$ are odd numbers)

- The i-th line of next K lines contains 5 integers t, u, v, p, q describes the i-step that applied to the panel:

    o If $t = 0$ then this is a cut step, if $t = 1$ then this is an union step

    o Numbered all integer points on the panel from $(0,0)$ to (x, y). The machine cut/union from point (u, v) to point (p, q)

    o It is guaranteed that interval from (u, v) to (p, q) is parallel with at least one panel's side, and this is a legal step

The sum of N, the sum of M and the sum of K over all test cases are at most 10^5

Output

Print T lines, the i-th one is YES or NO corresponding Quang can win the game in the i-th test case or not.

Sample:

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