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Showtime! (Points: 300)

Mr. Bean is visiting a laser show. In this show there are multiple fixed lasers (fixed in direction and position). All the lasers are parallel to an axis (Let's call it the Y-axis). There are multiple double sided mirrors kept on the stage that reflect the lasers. These mirrors, that are perpendicular to the stage, are fixed in position but free to rotate about an axis of rotation perpendicular to the stage. Mr. Bean wants to find out for each of these mirrors if it is possible to rotate them in a particular direction so that it reflects all the lasers. For all purposes assume the mirror size of infinite in height and length.

Input Format:

First line contains the number of test cases **T**. For each test case, the first line contain 3 integers **A**, **B** and **C** where **A** is the number oflasers pointing in the poisitive Y direction, **B** is the number of lasers pointing in the negative Y direction and **C** is the number of mirrors. Next **A** lines contain a pair of floating point numbers representing the X and Y coordinates of the lasers pointing in the positive Y direction. Next **B** gives the position of lasers pointing in the negative Y direction. Next **C** lines has a pair of floating point numbers representing the point about which the mirrors are fixed. The maximum X-coordinate is strictly positive and minimum X coordinate is strictly negative for lasers pointing in the positive Y direction and for lasers pointing in the negative Y direction.

Limits: $1 \leq \mathbf{T} \leq 100$, $1 \leq \mathbf{A}, \mathbf{B}, \mathbf{C} \leq 10000000$.

Output Format:

For each test case, output on a separate line having 1 if the mirror can reflect all the lasers in a particular orientation else it will contain 0.

Sample Input:

```
1
2 2 4
-2 -2
2 -2
1 1
-1 1
0 -3
0 -2
1 0
0 2
```

Sample Output:

```
0
```

```
1
1
0
```

Instructions

- Your program should not print anything other than what is specified in the output format. A program with extraneous output (even a single space) will be treated as incorrect!
- While submitting your code, please select the language carefully *gcc/g++*. Using the wrong language will lead to compiler error.
- The only input/output functions allowed are `printf, scanf, cin, cout`. Perform all read/write operations through stdin/stdout. The solutions will be checked using command line redirection only.

Problem Setter: *Arjun Naidu, Ramdutt Sharma*