INOI, Iranian National Olympiad in Informatics
Online Contest, April 2008
Fifth Exam

Africa

Time limit for each test: 2000 miliseconds
Memory limit: 32megabytes

A long time ago before the invention of stone-computers[1], clans in Africa were at war with each other. Villains have divided the land among them, in such a way that any two clans that were sharing a border were at war.

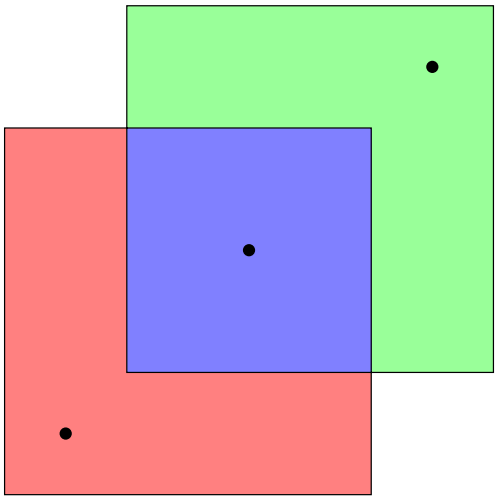
One day, the head of all villains drew some polygons on the map of Africa, dividing the map into some regions. Then, he united the people from each region and made a clan out of them. And finally he made them fight each other.

Two clans that didn't share a border couldn't fight each other. On the other hand, any two clans that shared borders[2] were at war with each other.

Centuries have passed and stone-computers were invented. Now our heroes want to make peace among all the clans. For this purpose, they decided to hold a peace conference and invite important people from Africa. Unfortunately, two people whose clans are at war, can not stand being in the same conference.

Now, you as a pre-historic programmer want to help. You have to find the maximum number of important people that can participate in the conference.

The figure on the right shows the map for sample input. In this figure, villains have drawn 2 rectangles and divided Africa into 3 regions. In each of these regions exactly one important person is living. The person in the middle won't participate in the conference with any of the other two; so the best solution is to leave him out, and invite the other two.



Problem

Write a program that

- reads the description of Africa and the important people from the *Standard Input*;
- computes the maximum number of people that can be invited to the conference;
- writes the result to the *Standard Output*.

Input Sepcification

The first line of the input contains n (the number of polygons) and m (the total number of important people).

On each of the next n lines, a polygon will be described. In the description of each polygon, an integer p will appear, and then p pairs of real numbers, each pair being the (x, y) coordinates of a single vertex (vertices are given in order). All of these numbers are seperated by single spaces.

On each of the next m lines, there is a pair of real numbers (seperated by a single space), describing the position of an important person, by giving the (x, y) coordinates.

[1] Which happened in 10,000 B.C.
[2] A single point is not considered as border

Output Specification

Write a single integer, the maximum number of important people that can be invited to the conference, to the first and only line of the output.

Restrictions

- $1 \leq n \leq 10$.
- $1 \leq m \leq 100$.
- For each polygon $3 \leq p \leq 10$.
- The absolute value of each real number given in the input is at most 1000, and it has at most three decimal places after the decimal point.
- No three edges (from the same or different polygons) pass through the same point.
- No vertex from a polygon is on the perimeter of another polygon.
- No two edges (from the same or different polygons) share more than one point.
- No polygon is completely inside another polygon.
- Each important person is at least inside one of the polygons, but not on the perimeter of any polygon.
- Polygons can intersect each other but all the polygons are simple.
- In 50% of the test cases, all the polygons are rectangles with edges parallel to x and y axes.
- In this problem, the result of some of the test cases will be given to you *during the contest*, after each of your submissions.

Example

Standard Input	Standard Output
2 3 4 0.0 0.0 3.0 0.0 3.0 3.0 0.0 3.0 4 1.0 1.0 4.0 1.0 4.0 4.0 1.0 4.0 0.5 0.5 2.0 2.0 3.5 3.5	2