

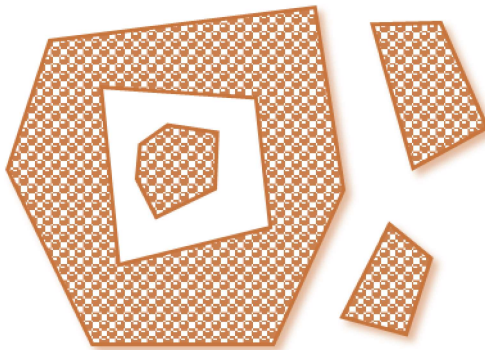


CMP (1s, 512M)

Everyone know what is a polygon, or even a convex polygon. Now we consider a Convex Multipolygon (CMP) which is a group of polygons where no side from any two member polygons can intersect each other. Each polygon is called a boundary of the CMP, a pair of boundaries may encloses one another. If we have a list of boundaries when one boundary enclose the next, the outermost boundary is called the out-boundary, the next one is in-boundary and the one after that is out-boundary, so on so forth.

A CMP will have at least one out-boundary and may not need any in-boundary at all. The area sandwiches between out-boundary and in-boundary (in that exact order) is called the internal areas of the CMP. A point is said to belong to the CMP if it's located in the internal of that CMP.

In the following illustration, the internal area of the CMP is drawn in dark orange color.



Let's write a program to determine whether point $P(x,y)$ belong to the CMP.

INPUT

The first line contains two integers N and Q ($0 < N \leq 3000$, $0 < Q \leq 10^5$), the number of boundaries and the number of queries respectively

N lines that follow, each starts with the integer M ($2 < M \leq 300$), the number of points defined one boundary. The follow M pairs of integer (x, y) is the coordinates of each points, given in clockwise order ($|x|, |y| \leq 10^6$).


What we have to find out whether it belongs in the array.

OUTPUT

For each query, answer with one word YES or NO on each line.

EXAMPLE

INPUT	OUTPUT
3 3	NO
3 6 9 4 7 8 5	YES
5 14 -1 13 4 9 4 6 2 8 -2	YES
3 11 0 11 2 9 2	
5 3	
6 7	
8 1	

 Submit

upload source code

Choose File

Select language
C++ (1s, 500MB)

Submit

Code editor