

ANTTT - The Ant

#geometry #scc

There are **n** sticks lying on the ground. The Ant can move only along the sticks. It can go from one stick to another only if the sticks intersect or touch each other. Help the Ant find out if it can reach the stick **y** from the stick **x**.

Input

The first line of the input contains number **t** – the amount of tests. Then **t** test descriptions follow. The first line of each test contains two integers **n** and **m** - the number of stick and the number of queries. Next **n** lines contain four integers **Ax, Ay, Bx, By** - the coordinates of the endpoints of a stick. You may consider stick to be straight segment on a plane. The next **m** lines contain two integers each **x** and **y** which are the queries.

Constraints

1 <= **t** <= 100
1 <= **n, m** <= 1000
-10000 <= **Ax, Ay, Bx, By** <= 10000
1 <= **x, y** <= **n**

Output

For each query print "YES" if the Ant can reach the stick number **y** from the stick number **x**, otherwise print "NO".

Example

Input:

```
2
3 3
1 3 4 3
3 4 3 1
3 1 5 1
1 2
1 3
2 2
3 3
1 1 3 1
2 1 3 1
3 2 4 1
1 2
1 3
2 3
```

Output:

```
YES
YES
YES
YES
NO
NO
```

Submit solution!

Submit solution!

Added by: [Spooky](#)

Date: 2009-06-02

Time limit: 1.111s

Source limit: 50000B

Memory limit: 1536MB

Cluster: [Cube \(Intel G860\)](#)

Languages: All except: ERL JS-RHINO
NODEJS PERL6 VB.NET
Advancement Spring 2009,

Resource: <http://sevolymp.uuuq.com/>
author: elmariachi1414

Evaluate this problem

Nobody has rated this problem yet, maybe you'll be the first?

Concept difficulty

easy normal hard extreme

Implementation difficulty

easy normal hard extreme

Recommend!



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#


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-  **abhishek55236:** 2020-06-02 17:50:38
my first geometry problem :)
-  **nadstratosfer:** 2020-01-21 11:18:30
Excellent problem. Pythonists must use PyPy here.
-  **asfd221:** 2019-08-24 20:16:38
Do not let precision error, get in way of AC.
-  **jkks1234:** 2019-01-11 11:51:46
Union find Ac in 1 go.
-  **surajkumar_cse:** 2018-12-16 22:43:19
Is there any better way to form intersect function? Except that of orientation.
-  **poorani_ravi:** 2018-06-01 11:30:56
How is it an "YES" for 1 3 4 3 and 3 1 5 1? They are parallel, aren't they?
-  **atikahamedutso:** 2018-01-21 12:01:23
got ac in one go :D
-  **rnc_123:** 2016-05-02 16:56:44
yep did it by union find ..gets accepted..good one..!!
- Last edit: 2016-05-03 09:18:59

 **Deepak :** 2016-01-25 11:19:24
don't know ..what was wrong with my first submission..just changed int to long long int ..union find.nice one..

 **Rishav Goyal:** 2014-05-27 18:57:09
@Spooky : i think i have covered each & every case , WA, could u plse give me some tricky case ?
line intersect function is also handmade :P :)

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- Authors of the problems are allowed to delete the post and use html code here (e.g. to provide some useful links).