# Geometry Queries

There are $N$ lines. Each line has an index between $1$ and $N$. The slope of each line is negative, i.e. it goes from upper-left to lower-right.

There are $Q$ queries. Each of them is in the format `L R x y`, and you should output whether there is any line with index between $L$ and $R$ and the point $(x, y)$ is under it. If there is, then the answer is `YES`, otherwise `NO`.

As you know, any line splits an infinite plane into two regions. The point $(x, y)$ is under the line if that point is at the same region with point $(-\infty, -\infty)$. If the point lies on the line it does not count.

**Input Format**
The first line contains $N$, the number of lines. The following $N$ lines each contains two integers $m$ and $n$ that describes the line $mx + n = y$.

The next line contains $Q$, the number of queries. Each subsequent line contains 4 integers $L, R, x, y$.

**Output Format**
For each query, output one line containing either `YES` or `NO`.

**Constraints**
$1 \leq N \leq 10^5$ (Number of lines)
$1 \leq Q \leq 10^5$ (Number of queries)
$-10^9 \leq x \leq 10^9$
$-10^9 \leq y \leq 10^9$
$-10^9 \leq m < 0$
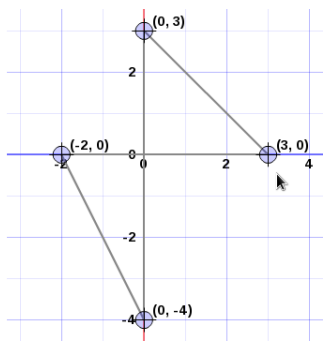$-10^9 \leq n \leq 10^9$
$1 \leq L \leq R \leq N$

**Sample Input**

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

**Sample Output**

```
YES
YES
NO
```

**Explanation**
The image shows the two lines of the sample input.

Time Limits: C/C++ 1 sec, Java/C# 2 sec, other languages follow standard TL given in