Sherlock and Geometry

Watson gives a circle and a triangle in a 2-dimensional plane to Sherlock. Sherlock has to tell if they intersect/touch each other. The circle is centered at (x_c, y_c) and has radius R.

Input Format

The first line contains T, the number of test cases.
Each test case consists of x_c, y_c and R in one line.
The next three lines each contains x_i, y_i denoting the vertices of the triangle.

Output Format

For each test case, print `YES` if the triangle touches or intersects the circle; otherwise, print `NO`.

Constraints

$1 \leq T \leq 30000$
$1 \leq R \leq 2000$
$-2000 \leq x_c, y_c \leq 2000$
$-5000 \leq x_i, y_i \leq 5000$
Note: There will be no degenerate triangles (i.e. triangles with area 0)

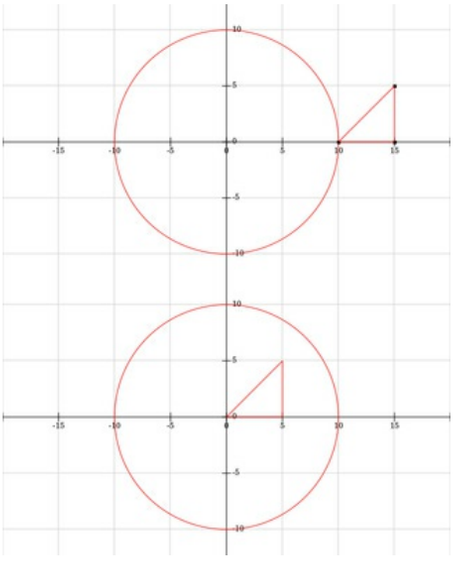
Sample Input

```
2
0 0 10
10 0
15 0
15 5
0 0 10
0 0
5 0
5 5
```

Sample Output

```
YES
NO
```

Explanation



In the first case, the triangle is touching the circle. In the second case, it neither touches nor intersects the circle.