Problem G. Line Segment Intersection

Time limit   1000 ms
Mem limit   524288 kB

There are two line segments: the first goes through the points (x_1, y_1) and (x_2, y_2), and the second goes through the points (x_3, y_3) and (x_4, y_4).

Your task is to determine if the line segments intersect, i.e., they have at least one common point.

Input

The first input line has an integer t: the number of tests.

After this, there are t lines that describe the tests. Each line has eight integers x_1, y_1, x_2, y_2, x_3, y_3, x_4 and y_4.

Output

For each test, print "YES" if the line segments intersect and "NO" otherwise.

Constraints

- $1 \le t \le 10^5$
- $-10^9 \le x_1, y_1, x_2, y_2, x_3, y_3, x_4, y_4 \le 10^9$
- $(x_1, y_1) \ne (x_2, y_2)$
- $(x_3, y_3) \ne (x_4, y_4)$

Example

Input	Output
5 1 1 5 3 1 2 4 3 1 1 5 3 1 1 4 3 1 1 5 3 2 3 4 1 1 1 5 3 2 4 4 1 1 1 5 3 3 2 7 4	NO YES YES YES YES