



Problem E: Convex Quadrilateral

Time limit: 1s; Memory limit: 512 MB

A quadrilateral is a polygon in Euclidean plane geometry with four edges and four vertices. Quadrilaterals are either simple (not self-intersecting), or complex (self-intersecting, or crossed). Simple quadrilaterals are either convex or concave. This problem focuses on convex quadrilateral. A convex quadrilateral is a quadrilateral which has all interior angles less than 180 degrees and all the diagonals lie within the quadrilateral.

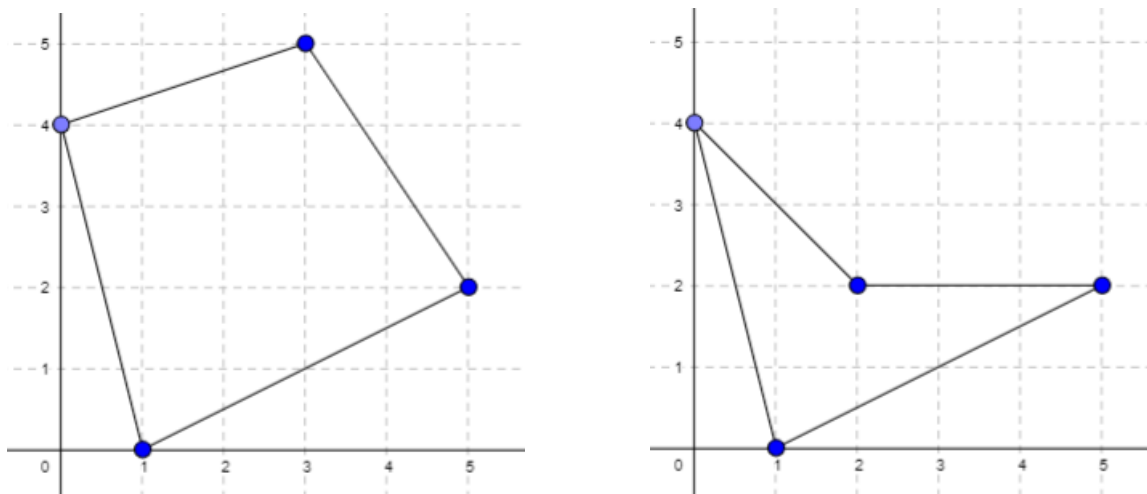


Figure 1. Left quadrilateral is a convex quadrilateral and right quadrilateral is not a convex quadrilateral

Given 4 points in 2D space, can they be the 4 vertices of a convex quadrilateral?

Input

- Each test contains several test cases. The first line contains one integer number t ($1 \leq t \leq 100$) — the number of test cases..
- The first line of each case contains 8 integers $x_1, y_1, x_2, y_2, x_3, y_3, x_4, y_4$ ($-10^9 \leq x_i, y_i \leq 10^9$) – coordinates of 4 points.

Output

- For each test case, print “YES” if these point are the 4 vertices of a convex quadrilateral and “NO” otherwise.

Sample

Input	Output
2	YES
1 0 0 4 3 5 5 2	NO
1 0 0 4 2 2 5 2	