Bangladesh Artificial Intelligence Olympiad (Preliminary)

2:05:38

Dashboard

A. Welcome to Bang...
B. Take Angle, Giv...
C. Odd Subset XOR
D. Can you predict...
E. Cycle of life
F. Lost in bracket...
G. Sum in summer
H. I think, theref...

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Resources

H. I think, therefore I am

Limits 1s, 512 MB

You are given a Cartesian plane divided into four quadrants. The task is to determine if a straight line segment defined by two points $(x1, y1)$ and $(x2, y2)$ crosses any integer coordinate points other than its endpoints.

Input

- The first line contains an integer $T (1 \leq T \leq 100000)$, the number of test cases.
- Each of the next T lines contains four integers $x1, y1, x2, y2$ representing the coordinates of the two endpoints of the line segment.
- The values of the coordinates will be in the range $[-999999, 999999]$.

Output

- For each test case, output "YES" if the line segment crosses any integer points between the endpoints $(x1, y1)$ and $(x2, y2)$, excluding the endpoints themselves. Otherwise, output "NO".

Sample

Input	Output
4 0 0 1 1 0 0 2 2 0 0 2 1 3 3 6 6	NO YES NO YES

Explanation

1. The line segment from (0,0) to (1,1) passes directly through the points and does not cross any other integer points.
2. The line segment from (0,0) to (2,2) crosses through the integer point (1,1).
3. The line segment from (0,0) to (2,1) does not cross any other integer points directly.
4. The line segment from (3,3) to (6,6) crosses through the integer points (4,4) and (5,5).

Submit

Choose a programming language, select your solution file, and click on Submit.

Python Python 3.12

Choose File No fi...osen

Up to 150 kB.

Submit Open Editor

Clarifications Request

No clarifications yet