Problem H. Hanmattan

Input file:	stdin
Output file:	stdout
Time limit:	1 second
Memory limit:	256 megabytes

Island Hanmattan can be represented as an $M \times N$ grid: $M+1$ streets are parallel to north-south direction, and $N+1$ avenues — to east-west direction. The distance between any two neighboring streets or avenues is equal to 1.

Naturally, crossings are identified by pairs of numbers: the street and avenue which meet on the crossing, i. e. from $(0, 0)$ to (M, N).

A taxi driver received an order to carry passenger A from one of the crossings to a railway station which is placed on another crossing. A taxi can only move along streets and avenues.

At the time of boarding, the driver got to know that some passenger B is waiting on some third crossing and wants to arrive to the same railway station. Now, the taxi driver wants to transport passenger A along some optimal (shortest) route to the station, but in addition, he wants to also take passenger B along the way. Given the coordinates of all three crossings, find out if this is possible.

Input

The first line of input contains four integers x_a, y_a, x_s, y_s: the coordinates of a crossing with passenger A and the coordinates of a crossing with the railway station. The second line contains two integers x_b and y_b: the coordinates of a crossing with passenger B. All coordinates are non-negative and do not exceed 10^6. It is guaranteed that all three crossings are pairwise distinct.

Output

Print "Yes" if it is possible to take passenger B while moving passenger A along an optimal route to the station, or "No" otherwise.

Examples

stdin	stdout
1 1 3 4 2 2	Yes
2013 1 2 2014 2014 2013	No
100 0 0 100 0 0	Yes