

C. Vectors

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

At a geometry lesson Gerald was given a task: to get vector B out of vector A . Besides, the teacher permitted him to perform the following operations with vector A :

- Turn the vector by 90 degrees clockwise.
- Add to the vector a certain vector C .

Operations could be performed in any order any number of times.

Can Gerald cope with the task?

Input

The first line contains integers x_1 и y_1 — the coordinates of the vector A ($-10^8 \leq x_1, y_1 \leq 10^8$). The second and the third line contain in the similar manner vectors B and C (their coordinates are integers; their absolute value does not exceed 10^8).

Output

Print "YES" (without the quotes) if it is possible to get vector B using the given operations. Otherwise print "NO" (without the quotes).

Examples

input
0 0 1 1 0 1
output
YES

input
0 0 1 1 1 1
output
YES

input
0 0 1 1 2 2
output
NO