Traversing Grid

Given 2 points in 2 dimensional space (xs,ys) and (xd,yd), your task is to find whether (xd,yd) can be reached from (xs,ys) by making a sequence of zero or more operations.
From a given point (x, y), the operations possible are:
a) Move to point (y, x)
b) Move to point (x, -y)
c) Move to point (x+y, y)
d) Move to point (2*x, y)

Input

The first line of input contains T, the number of test cases. T lines follow, one for each test case. For each test case, the input contains one line denoting the 4 integers xs, ys, xd, yd

Output

Output T lines, one for each test case. For each test case, output "YES" if (xd,yd) is reachable from (xs,ys) and "NO" otherwise. (quotes for clarity)

Example

Input:
1
1 1 2 2

Output:
YES

Constraints:
T <= 25
-10^10 <= xs, ys, xd, yd <= 10^10
Note that, although the input values are constrained by the above inequality, the coordinates of the points at the intermediate steps need not be.

Explanation:

Test case 1: We can move in the following manner: (1,1) -> (2,1), using the operation (x,y) -> (2*x,y). Then, move from (2,1) -> (1,2), using the operation (x,y) -> (y,x). Finally use the operation (x,y) -> (2*x,y) to move from (1,2) -> (2,2).