

UCF Local Contest — August 31, 2013

Jumping Frog

filename: jump

A frog is located at the coordinate (x_1, y_1) . He wants to go to the coordinate (x_2, y_2) . He will perform one or more jumps to reach his destination. The rule of the jumping is as follows: Suppose the frog is located at the coordinate (x, y) ; then he can jump to the following four squares:

1. $(x+y, y)$
2. $(x-y, y)$
3. $(x, y+x)$
4. $(x, y-x)$

The Problem:

Given the coordinates (x_1, y_1) and (x_2, y_2) , you need to determine if it is possible for the frog to travel from (x_1, y_1) to (x_2, y_2) through a series of jumps as described.

The Input:

The first input line contains an integer, n ($1 \leq n \leq 100$), indicating the number of test cases. Each test case consists of four integers (between -1,000,000,000 to +1,000,000,000 inclusive) separated by a single space denoting x_1 , y_1 , x_2 and y_2 , respectively.

The Output:

For each test case, output 1 if the frog can travel from (x_1, y_1) to (x_2, y_2) through a series of jumps as described or 0 otherwise.

Sample Input:

```
3
-6 8 17 25
13 17 -16 11
0 0 5 6
```

Sample Output:

```
0
1
0
```