

Problem ID: kingsmeeting

You have heard a lot about the majestic castles of the Middle Ages. Sadly, most of the castles were destroyed during the many wars of the time. Instead of visiting old ruins, you decide to travel to the Middle Ages for an authentic sightseeing tour.

Upon arrival you find yourself in the middle of a heated argument between three kings.

The first king explains: “Each of us owns a castle, but we are unable to agree on the sizes of our kingdoms. A kingdom is defined by a number l and the location of the corresponding castle. Everything within a distance of less than l from the castle will be part of that kingdom. Our kingdoms do not necessarily have to be of the same size, but none of them should be empty. Also, calculating square roots is really hard for us. So instead of using the distance $\sqrt{d_x^2 + d_y^2}$ between two points whose x and y coordinates differ by d_x and d_y , we simply build the sum of the horizontal and the vertical difference, i.e. $d = |d_x| + |d_y|$.”



The second king goes on to say that “all points with a distance of exactly l from a castle form the border of the corresponding kingdom. It does not matter if the kingdoms’ borders touch, so long as the kingdoms themselves do not overlap one another!”

Finally, the last king adds: “If we want to maintain peace, we must agree on a location s where we can meet from time to time to discuss important matters. This location must lie on the border of all three kingdoms, so that each of us can travel there safely. Please help us find such a location – otherwise, we will have no choice but to go to war again and destroy our beautiful castles in the process.”

Input

The input consists of three lines specifying the location of the three castles. Each line contains two integers x and y ($-10^{10} \leq x, y \leq 10^{10}$), giving the location of one castle. No two castles share the same location.

Output

If it is possible to form kingdoms that satisfy all conditions laid out above, output a single line containing the x and y coordinates of s . Otherwise, print `impossible`.

Sample Input 1

```
0 0
3 3
5 1
```

Sample Output 1

```
3 1
```

Sample Input 2

```
0 0
3 0
4 2
```

Sample Output 2

```
impossible
```