# Problem I: Imperfect Isomorphism

Charlotte has a lot of cube-shaped blocks that are all the same size. She likes to build structures out of them by repeatedly gluing blocks to one another (such that the glued surfaces completely cover each other). She hands you her two latest creations and tells you that she used exactly one block more for the first than she did for the second.

She then poses a riddle: Is it theoretically possible to recreate the first structure by adding one block to the second? And if so, how? Note that Charlotte doesn't want a demonstration, just an answer, so it's okay if the added block would have to be inserted in some closed-off area of the structure (the blocks are transparent enough to see inside). Of course, the structures can be moved and rotated independently of one another, but not mirrored.

Did you know that . . . ?

. . . block play can increase the creativity and mathematical thinking of young children? Blocks can be moved freely, combined and recombined in countless ways, offering opportunities to test hypotheses and build scientific reasoning.

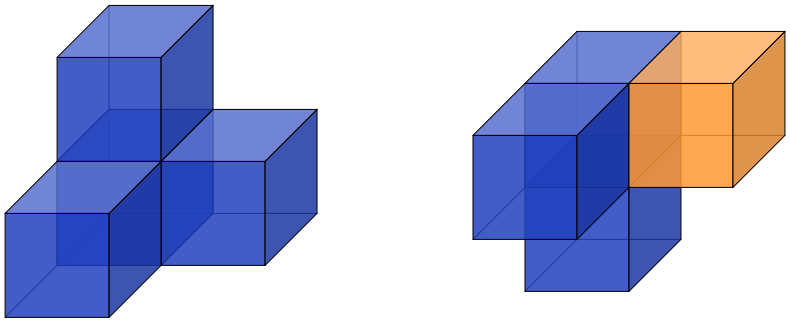

Figure I.1: Visualisation of the first sample case, with its output block indicated by a different colouring.

## Input

The input consists of:

- One line with an integer $n$ ($2 \leq n \leq 10^5$), giving the first structure's number of blocks.
- $n$ lines consisting of three integers $x, y, z$ ($-10^5 \leq x, y, z \leq 10^5$), giving the coordinates of the first structure's blocks.
- $n - 1$ lines consisting of three integers $x, y, z$ ($-10^5 \leq x, y, z \leq 10^5$), giving the coordinates of the second structure's blocks.

The blocks are axis-aligned and have a side length of 1. Note that the two structures are each given in their own Cartesian coordinate system. You may safely assume that each structure is one connected object and no two blocks occupy the same space.

## Output

If the first structure cannot be recreated by adding one block to the second structure, output `impossible`. Otherwise, output three integers $x, y, z$, giving the coordinates to put said block in the second structure's coordinate system. If there are multiple valid solutions, any of them will be accepted.

**Sample Input 1**

```
4
0 0 0
1 0 0
0 1 0
0 0 1
0 0 0
0 1 0
0 1 1
```

**Sample Output 1**

```
1 1 0
```

**Sample Input 2**

```
4
10 10 0
10 11 0
11 10 0
11 11 0
0 0 0
0 0 1
0 0 -1
```

**Sample Output 2**

```
impossible
```

**Sample Input 3**

```
2
-100000 -100000 -100000
-100000 -99999 -100000
100000 100000 100000
```

**Sample Output 3**

```
100000 100000 100001
```