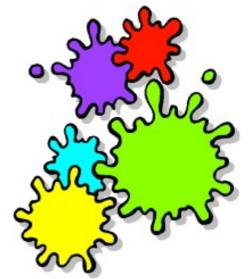You are playing paintball on a 1000×1000 square field. A number of your opponents are on the field hiding behind trees at various positions. Each opponent can fire a paintball a certain distance in any direction. Can you cross the field without being hit by a paintball?

Assume that the southwest corner of the field is at $(0, 0)$ and the northwest corner at $(0, 1000)$.

Input

The input contains several scenario. Each scenario consists of a line containing $n \leq 1000$, the number of opponents. A line follows for each opponent, containing three real numbers: the (x, y) location of the opponent and its firing range. The opponent can hit you with a paintball if you ever pass within his firing range.

You must enter the field somewhere between the southwest and northwest corner and must leave somewhere between the southeast and northeast corners.

Output

For each scenario, if you can complete the trip, output four real numbers with two digits after the decimal place, the coordinates at which you may enter and leave the field, separated by spaces. If you can enter and leave at several places, give the most northerly. If there is no such pair of positions, print the line:'IMPOSSIBLE'

Sample Input

```
3
500 500 499
0 0 999
1000 1000 200
```

Sample Output

```
0.00 1000.00 1000.00 800.00
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