

2873 EXOCENTER OF A TRIANGLE

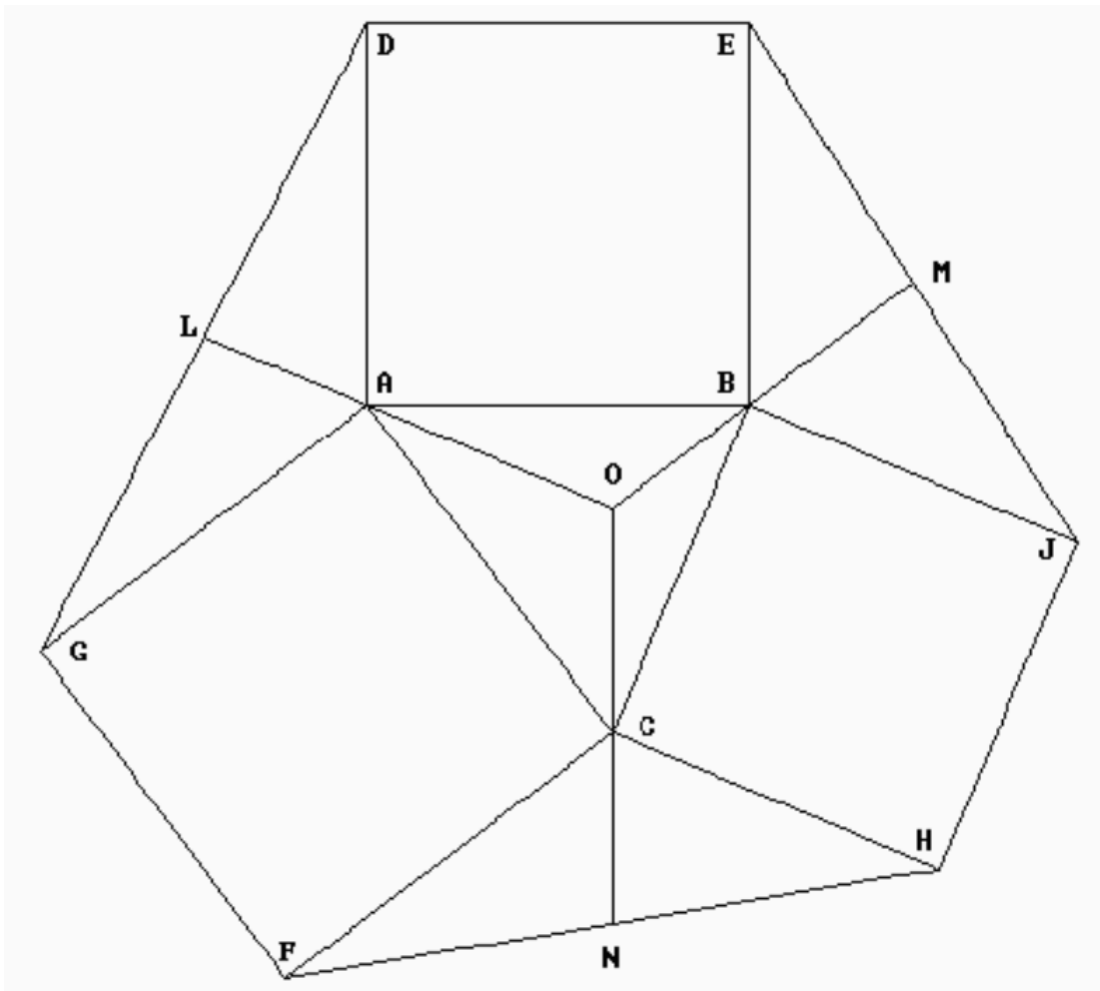
Given a triangle ABC , the *Extriangles* of ABC are constructed as follows:

- On each side of ABC , construct a square ($ABDE$, $BCHJ$ and $ACFG$ in the figure below).
- Connect adjacent square corners to form the three *Extriangles* (AGD , BEJ and CFH in the figure).

The *Exomedians* of ABC are the medians of the *Extriangles*, which pass through vertices of the original triangle, extended into the original triangle (LAO , MBO and NCO in the figure).

As the figure indicates, the three *Exomedians* intersect at a common point called the *Exocenter* (point O in the figure).

This problem is to write a program to compute the *Exocenters* of triangles.



Input

The first line of the input consists of a positive integer n , which is the number of datasets that follow. Each dataset consists of 3 lines; each line contains two floating point values which represent the (two-dimensional) coordinate of one vertex of a triangle. So, there are total of $(n * 3) + 1$ lines of input.

Note: All input triangles will be strongly non-degenerate in that no vertex will be within one unit of the line through the other two vertices.

Output

For each dataset you must print out the coordinates of the *Exocenter* of the input triangle correct to four decimal places.

Sample Input

```
2
0.0 0.0
9.0 12.0
14.0 0.0
3.0 4.0
13.0 19.0
2.0 10.0
```

Sample Output

```
9.0000 3.7500
-48.0040 23.3600
```