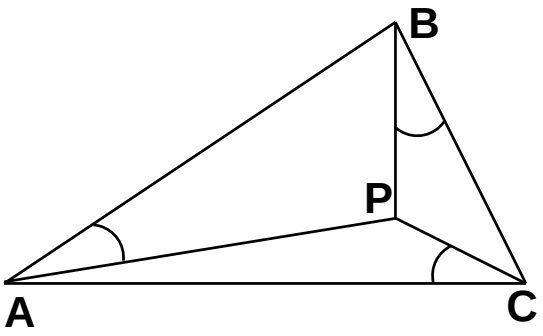
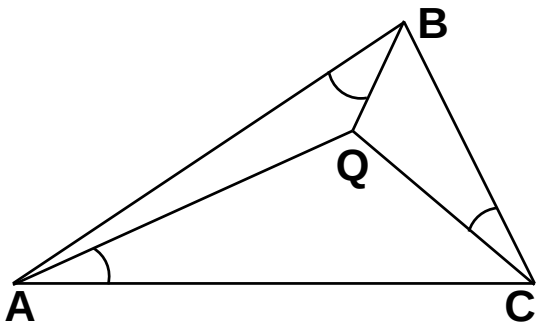
D: Equal Angles

The All-Equal company has been tasked with placing towers on triangular plots so that the angles formed between the towers and the sides of the plots are equal. Given a triangle defined by points A, B and C, there are two such points - call them P and Q. There is one where angles PAB = PBC = PCA, and one where angles QBA = QCB = QAC.





Input

There will be several test cases in the input. Each test case will consist of six integers on a single line:

AX AY BX BY CX CY

Each integer will be in the range from -100 to 100. These integers represent the three points of the triangle: (**AX**,**AY**), (**BX**,**BY**) and (**CX**,**CY**). The points are guaranteed to form a triangle: they will be distinct, and will not all lie on the same line. The input will end with a line with six 0s.

Output

For each test case, output four space-separated real numbers:

PX PY QX QY

Where (**PX**,**PY**) and (**QX**,**QY**) are the requested points. Print each real number with exactly two decimal places, rounded, and put a single space between them. Print no blank lines between outputs.

Sample Input

```
-4 5 -10 0 7 0
-15 -5 15 -5 0 21
0 0 0 0 0 0
```

Sample Output

```
-6.26 1.28 -1.96 3.07
0.01 3.66 -0.01 3.66
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