

## Problem G

# Fourth Point!!

**Input:** standard input

**Output:** standard output

**Time Limit:** 2 seconds

**Memory Limit:** 32 MB

Given are the  $(x, y)$  coordinates of the endpoints of two adjacent sides of a parallelogram. Find the  $(x, y)$  coordinates of the fourth point.

## Input

Each line of input contains eight floating point numbers: the  $(x, y)$  coordinates of one of the endpoints of the first side followed by the  $(x, y)$  coordinates of the other endpoint of the first side, followed by the  $(x, y)$  coordinates of one of the endpoints of the second side followed by the  $(x, y)$  coordinates of the other endpoint of the second side. All coordinates are in meters, to the nearest mm. All coordinates are between **-10000** and **+10000**. Input is terminated by end of file.

## Output

For each line of input, print the  $(x, y)$  coordinates of the fourth point of the parallelogram in meters, to the nearest mm, separated by a single space.

## Sample Input

```
0.000 0.000 0.000 1.000 0.000 1.000 1.000 1.000
1.000 0.000 3.500 3.500 3.500 3.500 0.000 1.000
1.866 0.000 3.127 3.543 3.127 3.543 1.412 3.145
```

## Sample Output

```
1.000 0.000
-2.500 -2.500
0.151 -0.398
```

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(World Finals Warm-up Contest, Problem Source: University of Alberta Local Contest)

“You don’t get a rank in a contest if you don’t solve any problem. So there must be a Problem which can be solved by almost every team.”