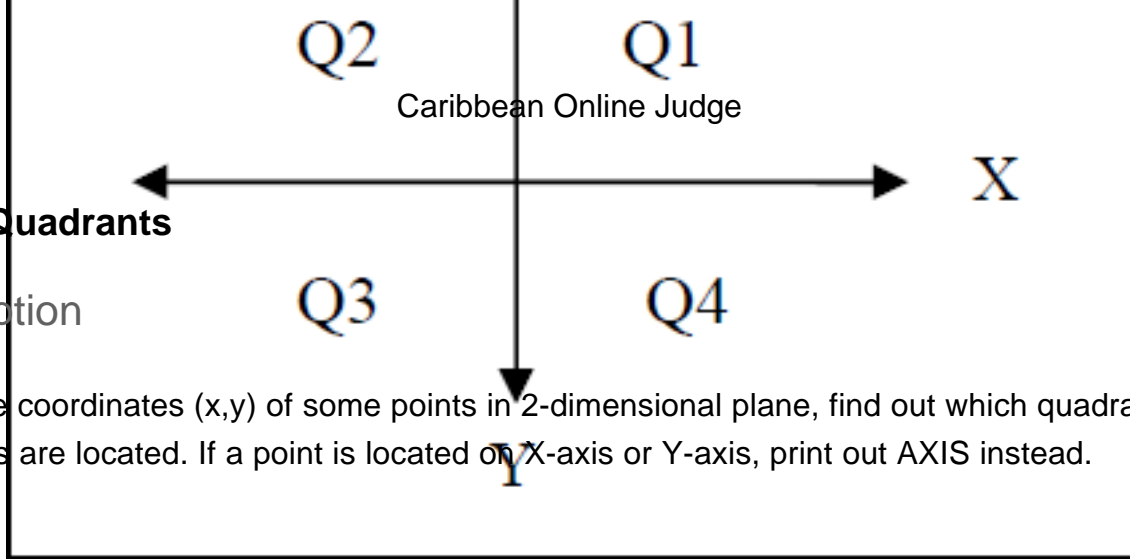


2845 - Quadrants

Description

Given the coordinates (x,y) of some points in 2-dimensional plane, find out which quadrant(Q1-Q4) the points are located. If a point is located on X-axis or Y-axis, print out AXIS instead.



Input specification

Each line contains a pair of real numbers which is the coordinate of a point. Input is terminated by the point 0 0, which should be taken into account too.

Output specification

Print out in each line Q1, Q2, Q3, Q4 or AXIS for each point.

Sample input

```
1 2
-1 -0.12
4 0
-10.4 200
0 0
```

Sample output

```
Q1
Q3
AXIS
Q2
AXIS
```

Hint(s)

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