Problem C: Points in Figures: Rectangles and Circles

Given a list of figures (rectangles and circles) and a list of points in the x-y plane, determine for each point which figures (if any) contain the point.

Input

There will be $n(\leq 10)$ figures descriptions, one per line. The first character will designate the type of figure (``r", ``c" for rectangle or circle, respectively). This character will be followed by values which describe that figure.

- For a rectangle, there will be four real values designating the x-y coordinates of the upper left and lower right corners.
- For a circle, there will be three real values, designating the x-y coordinates of the center and the radius.

The end of the list will be signalled by a line containing an asterisk in column one.

The remaining lines will contain the x-y coordinates, one per line, of the points to be tested. The end of this list will be indicated by a point with coordinates 9999.9 9999.9; these values should not be included in the output.

Points coinciding with a figure border are not considered inside.

Output

For each point to be tested, write a message of the form:

```
Point i is contained in figure j
```

for each figure that contains that point. If the point is not contained in any figure, write a message of the form:

```
Point i is not contained in any figure
```

Points and figures should be numbered in the order in which they appear in the input.

Sample Input

```
r 8.5 17.0 25.5 -8.5
c 20.2 7.3 5.8
r 0.0 10.3 5.5 0.0
c -5.0 -5.0 3.7
r 2.5 12.5 12.5 2.5
c 5.0 15.0 7.2
*
2.0 2.0
4.7 5.3
```

```
6.9 11.2
20.0 20.0
17.6 3.2
-5.2 -7.8
9999.9 9999.9
```

Sample Output

```
Point 1 is contained in figure 3
Point 2 is contained in figure 3
Point 2 is contained in figure 5
Point 3 is contained in figure 5
Point 3 is contained in figure 6
Point 4 is not contained in any figure
Point 5 is contained in figure 1
Point 5 is contained in figure 2
Point 6 is contained in figure 4
```

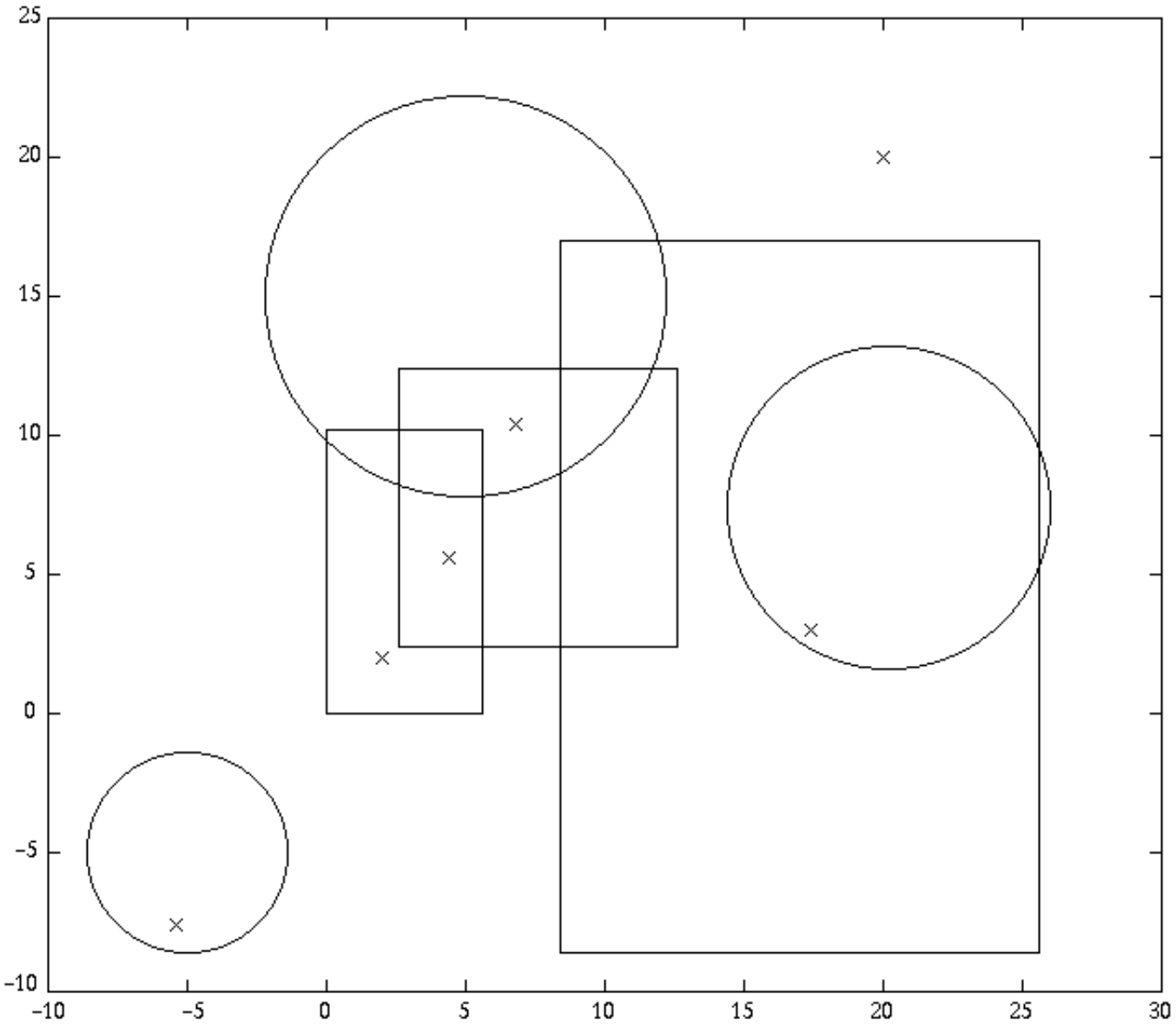

Diagrama of sample input figures and data points