# Problem 5 – Intersecting Figures

You are given **a rectangle** and **a circle** in a two-dimensional Cartesian coordinate system. Find their relative position.

A **rectangle** is defined by two points: top-left and bottom-right. All rectangle sides are parallel to the coordinate axes. A **circle** is defined by its center and radius.



## Input

* The input is read from the console.
* On the first line, there are the number of test cases **T**
* On the next **2 \* T** lines, there are the test cases. All test cases are independent.
* Each test case consists of exactly two text lines.
* The lines are in one of the following formats:
  + **rectangle(Ax, Ay, Bx, By)**
  + **circle(Ox, Oy, R)**
* The lines in a test case may be present in any order.

## Output

* The output consists of **T** lines.
* For each test case, print the relative position of the rectangle and circle. The position may be one of the following:
  + The rectangle is inside the circle (print **Rectangle inside circle**)
  + The circle is inside the rectangle (print **Circle inside rectangle**)
  + The rectangle and the circle intersect (print **Rectangle and circle cross**)
  + The rectangle and the circle do not intersect (and neither is inside the other) (print **Rectangle and circle do not cross**)
* See the test cases below for examples.

## Constraints

* **T** is an integer in the interval [1; 1000].
* , , , , , , and are real numbers in the range [-1000; 1000]. is always positive.
* When calculating, consider two points to be close enough to be considered the same if their X and Y coordinates are less than 0.01 units apart.
* Time limit: **100 ms**. Allowed memory: **16 MB**.

## Sample Input and Output

**Note:** The colors in the last sample output are for easier viewing only. You do not need to produce colored output.

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Explanation** |
| 1 circle(-3, 1, 1.5) rectangle(-6, 4, 1, -1) | Circle inside rectangle |  |
| 1 rectangle(-5, 3, -2, 1)  circle(-3.5, 2, 2.5) | Rectangle inside circle |  |
| 1 rectangle(-3, 2, 2, -1)  circle(-3.5, 2, 2.5) | Rectangle and circle cross |  |
| 1  circle(-6, 3, 1)  rectangle(-3, 2, 2, -1) | Rectangle and circle do not cross |  |
| 7  rectangle(-3, 5, 12, -2)  circle(-3, 5, 3)  circle(-2, 0, 1)  rectangle(-3, 5, 12, -2)  rectangle(-3, 5, 12, -2)  circle(4.96, 2.09, 2.01)  rectangle(-3, 5, 12, -2)  circle(11.29, 2.41, 2.15)  circle(6, -4, 2)  rectangle(-3, 5, 12, -2)  rectangle(-3, 5, 12, -2)  circle(13, -3, 1.41421)  circle(15.78, -5.18, 0.87)  rectangle(-3, 5, 12, -2) | Rectangle and circle cross  Circle inside rectangle  Circle inside rectangle  Rectangle and circle cross  Rectangle and circle cross  Rectangle and circle cross  Rectangle and circle do not cross | |