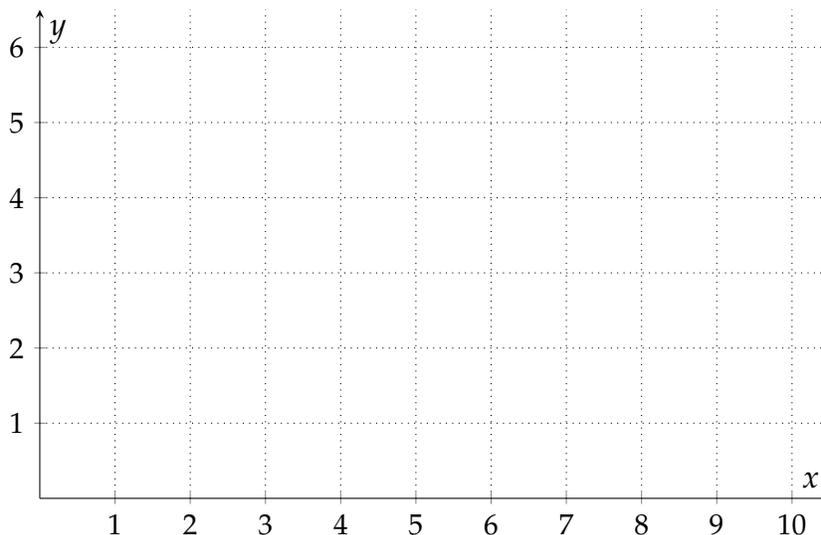


1. The equations,

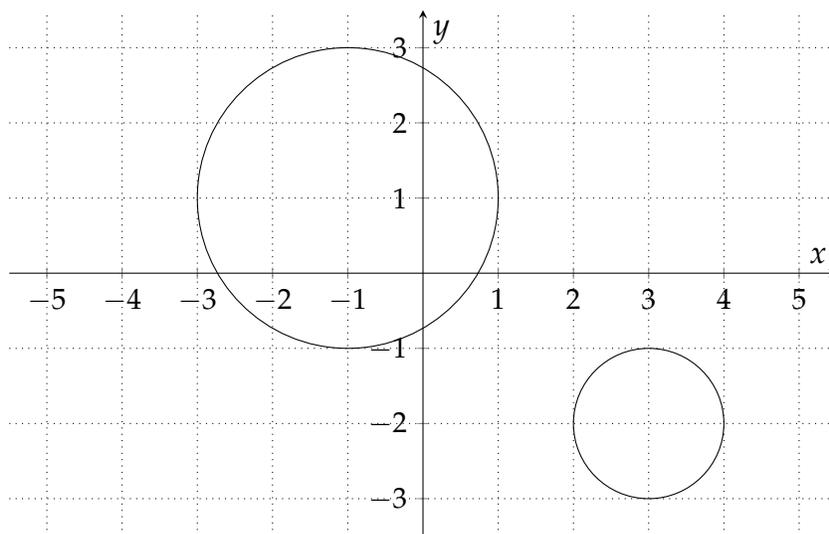
$$(x - 6)^2 - (y - 4)^2 = 4 \quad \text{and} \quad (x - 3)^2 - (y - 3)^2 = 9$$

describe graphs of what shape?

Draw them both below on the axes provided.



2. Two circles are defined in the graph,



Write an equation for each circle depicted above.

3. Determine whether the point  $P$  is inside, outside, or on the circle with center  $C$  and radius  $r$ .

a)  $P(2,4), C(4,7), r = 4$

b)  $P(6,10), C(3,6), r = 5$

c)  $P(3,9), C(2,5), r = 6$

4. Solve the inequalities for  $x$ , putting your answers in interval notation.

a)  $2x + 7 < 4x - 1$ .

b)  $\frac{5}{5x + 2} \geq 0$ .

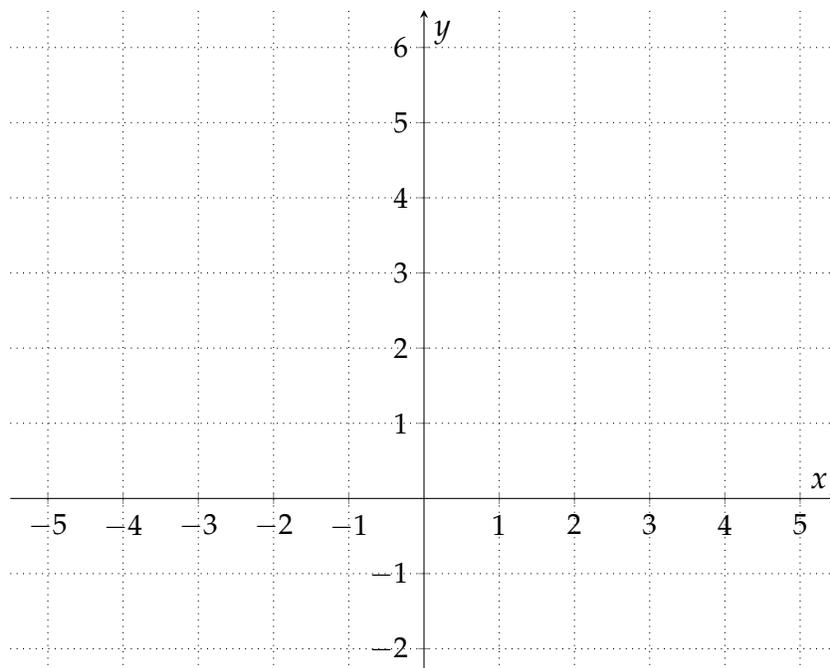
5. Complete the squares to find the center and the radius of the circle.

$$x^2 + y^2 - 12x + 2y - 44 = 0$$

6. Sketch the graph of the equation,

$$y = -x^2 + 5$$

on the axes below



List any  $y$ -intercepts of the graph.

List any  $x$ -intercepts of the graph.