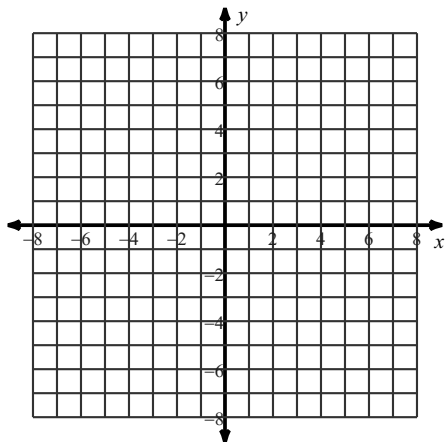


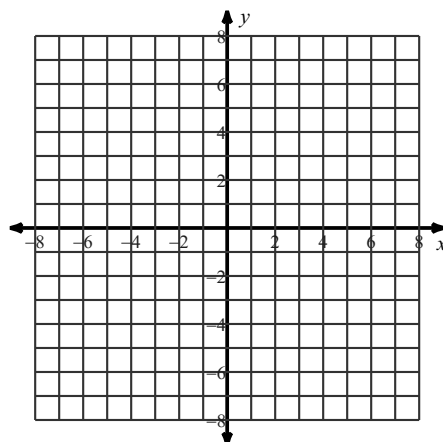
# Graphing Circles 4 (GC4)

Identify the center and radius of each. Then sketch the graph.

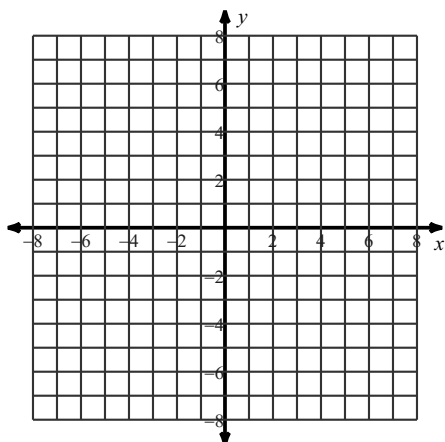
1)  $x^2 + y^2 - 8x + 2y + 9 = 0$



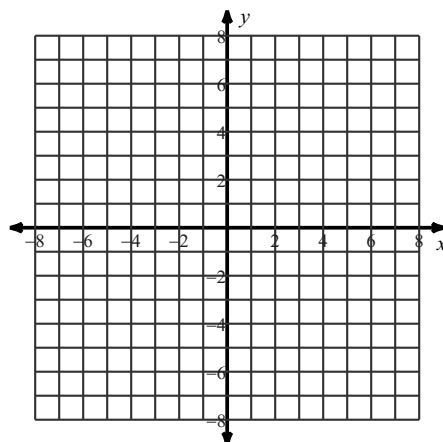
2)  $2x^2 + 2y^2 - 6x + 2y - 45 = 0$



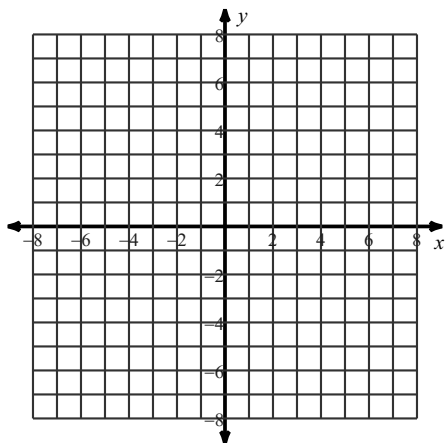
3)  $x^2 + y^2 + 2x - 6y + 9 = 0$



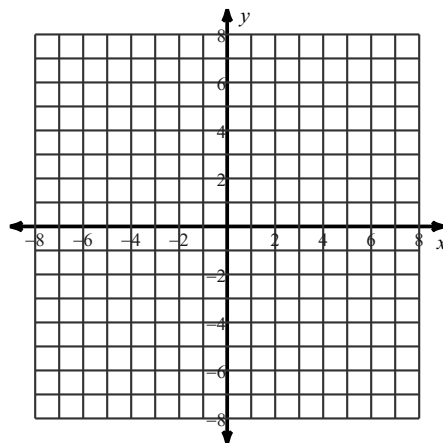
4)  $x^2 + y^2 + 4x - 2y - 4 = 0$



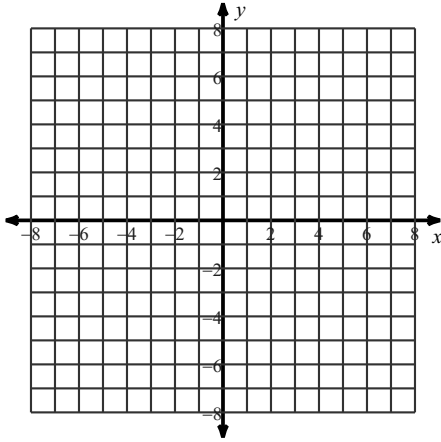
5)  $x^2 + y^2 - 4x - 6y + 4 = 0$



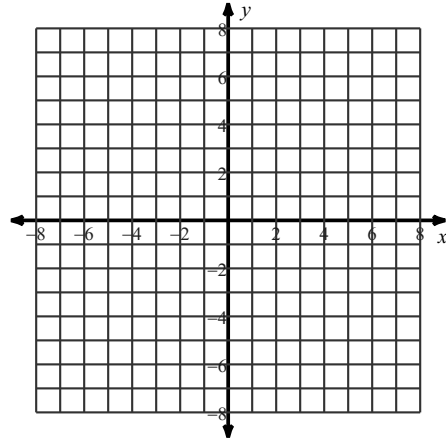
6)  $x^2 + y^2 - 4y + 1 = 0$



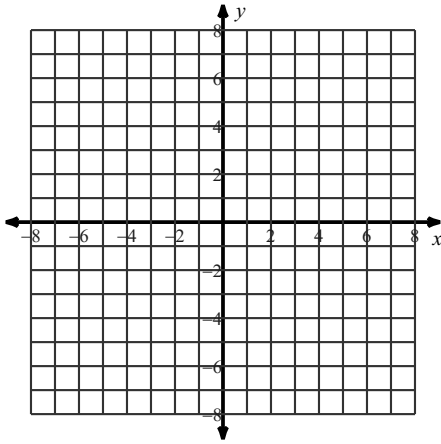
7)  $x^2 + y^2 - 8x + 12 = 0$



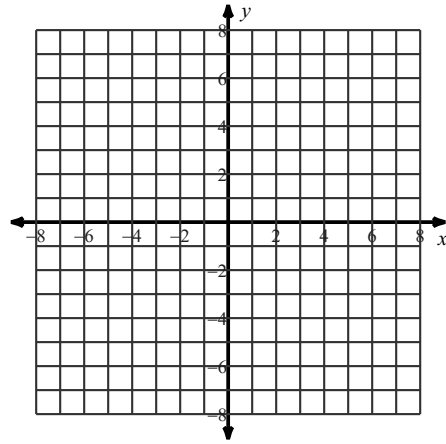
8)  $x^2 + y^2 + 4x + 2y - 11 = 0$



9)  $x^2 + y^2 - 2x + 8y + 13 = 0$

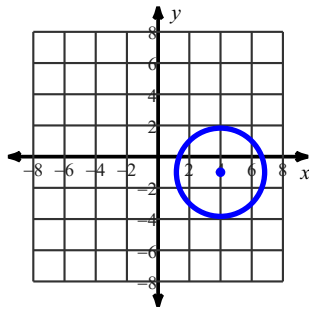


10)  $x^2 + y^2 - 8x - 2y + 16 = 0$



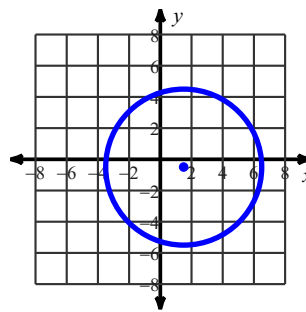
# Answers to Graphing Circles 4 (GC4)

1)



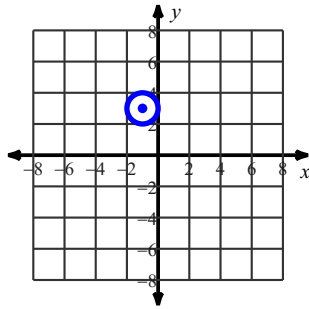
Center:  $(4, -1)$   
Radius:  $2\sqrt{2}$

2)



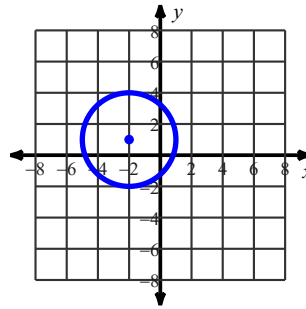
Center:  $(\frac{3}{2}, -\frac{1}{2})$   
Radius: 5

3)



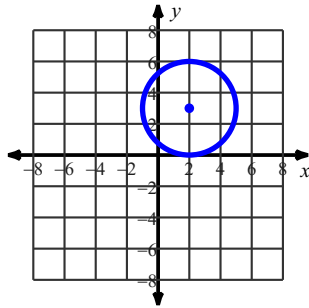
Center:  $(-1, 3)$   
Radius: 1

4)



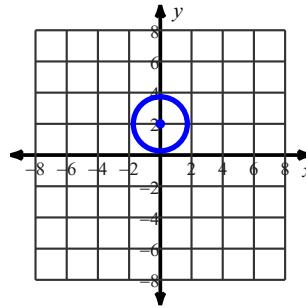
Center:  $(-2, 1)$   
Radius: 3

5)



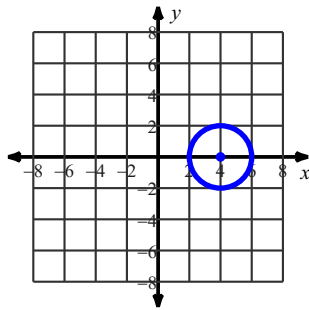
Center:  $(2, 3)$   
Radius: 3

6)



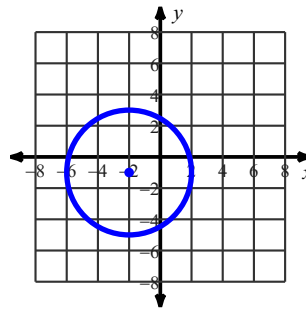
Center:  $(0, 2)$   
Radius:  $\sqrt{3}$

7)



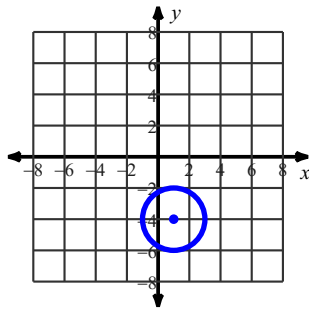
Center:  $(4, 0)$   
Radius: 2

8)



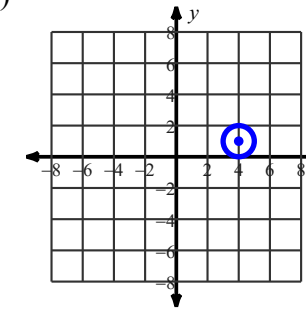
Center:  $(-2, -1)$   
Radius: 4

9)



Center:  $(1, -4)$   
Radius: 2

10)



Center:  $(4, 1)$   
Radius: 1