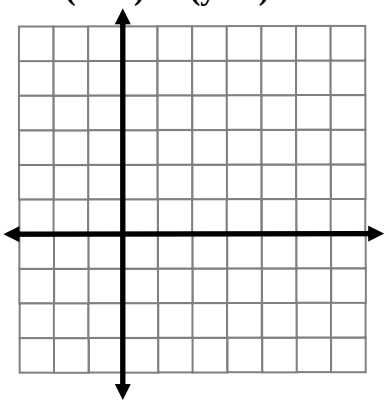
Circle Review Worksheet **Name** _____

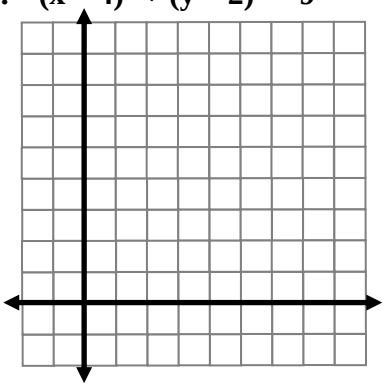
Equation of a Circle: $\mathbf{(x-h)^2+(y-k)^2=r^2}$, Center = (h, k) and Radius = r

1) **Graph the following circle:**

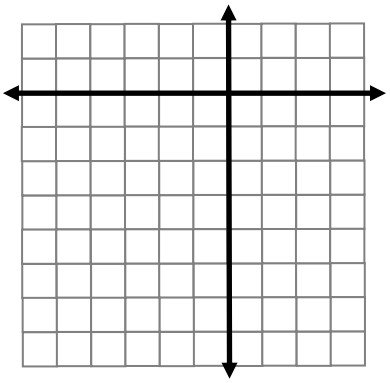
a. $\mathbf{(x-1)^2+(y-3)^2=4}$



b. $\mathbf{(x-4)^2+(y-2)^2=9}$



c. $\mathbf{(y+3)^2+(x+1)^2=16}$



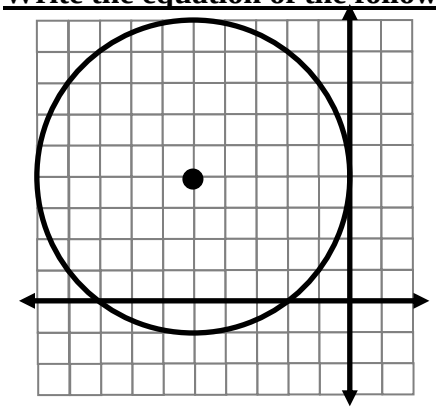
2) For each circle: Identify its center and radius.

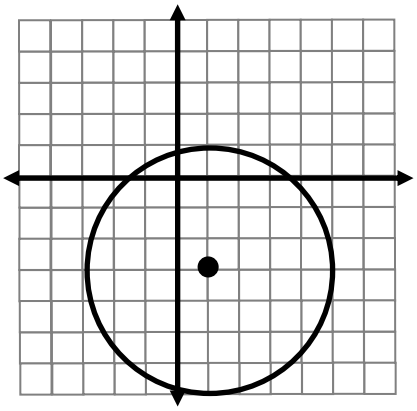
a. $\mathbf{(x+2)^2+(y-5)^2=36}$ b. $\mathbf{x^2+(y-9)^2=18}$ c. $\mathbf{(y+1)^2+(x+7)^2=24}$

Center:_____ Center:_____ Center:_____

Radius:_____ Radius:_____ Radius:_____

3) **Write the equation of the following circles:**





4) Give the equation of the circle that is tangent to the y-axis and center is (-3, 2).

5) Give the equation of the circle that is tangent to the x-axis and center is (5, -7).

Finding Circles in Standard Form: COMPLETE THE SQUARE on the x terms and y terms separately.

EXP: $x^2 + y^2 + 6x - 8y - 11 = 0$

$(x^2 + 6x) + (y^2 - 8y) = 11$ ***x-terms: 6 ÷ 2 = 3 and $(3)^2 = 9$ y-terms: -8 ÷ 2 = -4 and $(-4)^2 = 16$***

$(x^2 + 6x + 9) + (y^2 - 8y + 16) = 11 + 9 + 16$ ***Factor***

$\mathbf{(x + 3)^2 + (y - 4)^2 = 36}$ Center: (-3, 4) Radius: 6

6) Find the standard form, center, and radius of the following circles:

6a) $\mathbf{x^2 + y^2 - 4x + 10y - 7 = 0}$

Center:_____ Radius:_____

6b) $\mathbf{x^2 + 8x + y^2 + 5y - 2 = 0}$

Center:_____ Radius:_____

6c) $\mathbf{x^2 - 2x + y^2 + 12y + 18 = 0}$

Center:_____ Radius:_____

6d) $\mathbf{x^2 - 10x + y^2 - 6y + 9 = 0}$

Center:_____ Radius:_____

7) Give the equation of the circle whose

a. Center is (4,-2) and goes through (2, 5)

b. Center is (3, 3) and goes through (1, 1)

9) Give the equation of a circle whose

a. Endpoints of a diameter at (-4, 1) and (4, -5)

b. Endpoints of a diameter at (7, -2) and (3, -8)