Geometry Note-Taking Guide **Name:_____**

Section 9.5 - Equations of Circles

The standard equation of a circle with radius r and center (h, k) is:

$$(x-h)^2+(y-k)^2=r^2$$

Center: (h,k) Radius: r

Ex 1:
Determine the center and the radius of the circle.

a) $(x+2)^2+(y-3)^2=36$ **b)** $(x+4)^2+y^2=64$

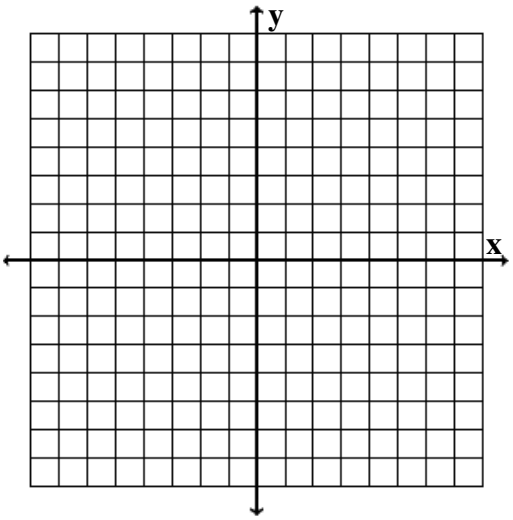
Ex 2:
Write the standard equation of a circle using the given information.

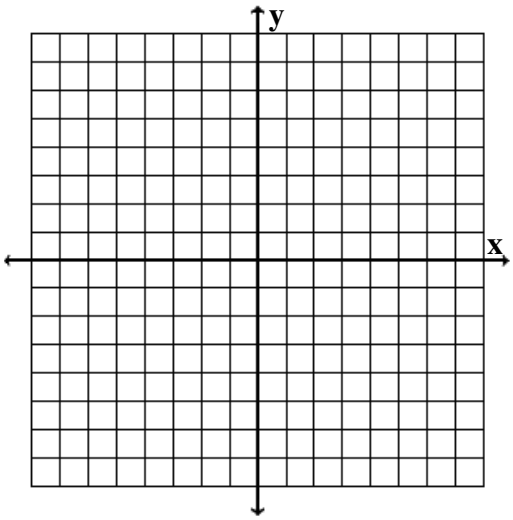
Important: To construct an equation of **line** y = mx + b, you need to determine the **slope, m** and the **y-intercept, b**. In the same sense, to construct the equation of a **circle** $(x-h)^2+(y-k)^2=r^2$, you need to determine the **center (h,k)** and the **radius r**.

a) center $(3,-4)$, radius 7 **b)** center $(-1,2)$, point on circle (2,6)

Ex 3:
Graph the equation of the circle. **Important:** First write the equation in standard form.

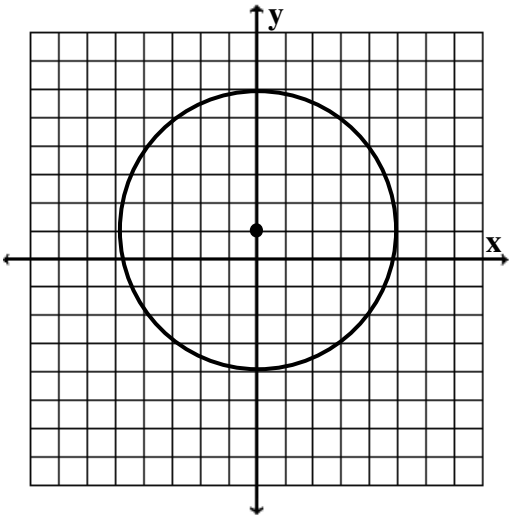
a) $x^2+(y+3)^2=16$ **b)** $(x+2)^2+(y-4)^2=4$





Ex 4:
Find the coordinates of the center, the radius, and the equation of the circle**.**

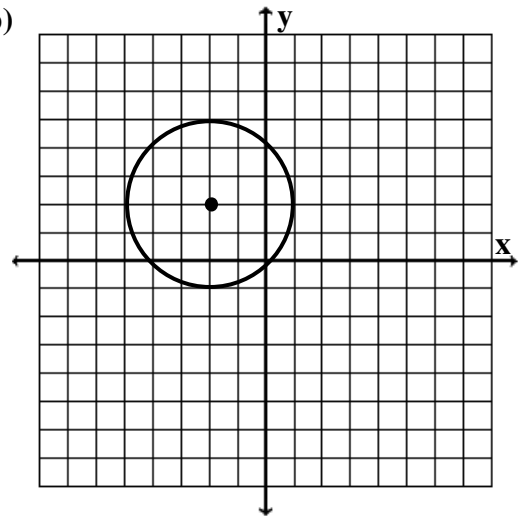
a)



Center (h,k): _____

Radius r: _____

b)



Center (h,k): _____

Radius r: _____

Equation of Circle:_____ Equation of Circle:_____