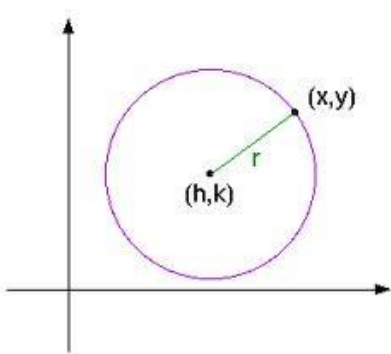


Unit #2: Algebra Topics

EQ:

Circle --- the set of all points in a plane that are a common distance, called the _____, from a fixed point, called the _____.

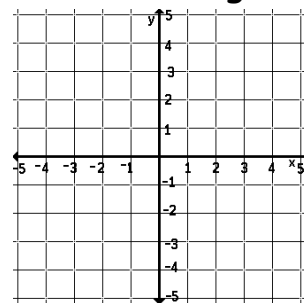


center: _____ radius: _____

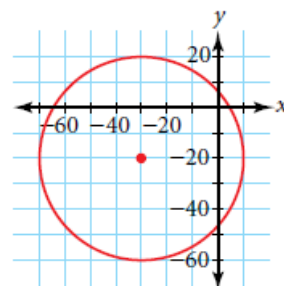
❖ Standard Form of a Circle: An equation for the circle with its center at _____ and a radius of _____ is _____

❖ Standard Equation of a Translated Circle: The standard equation for a circle with its center at _____ and a radius of _____ is _____

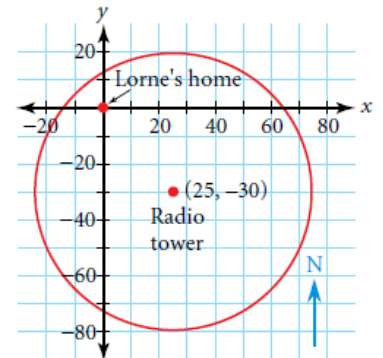
Ex. 1 Write the standard equation of the circle whose center is at the origin and whose radius is 3. Sketch the graph.



Ex. 2 Write the standard equation of the translated circle graphed at the right.



Ex. 3 A cell phone tower is located 25 miles east and 30 miles south of Lorne's home. The tower's signal is strong enough to reach phones within a 50 miles radius. Write the equation that represents all ground locations 50 miles from the cell phone tower, given that Lorne's home is located at $(0, 0)$.

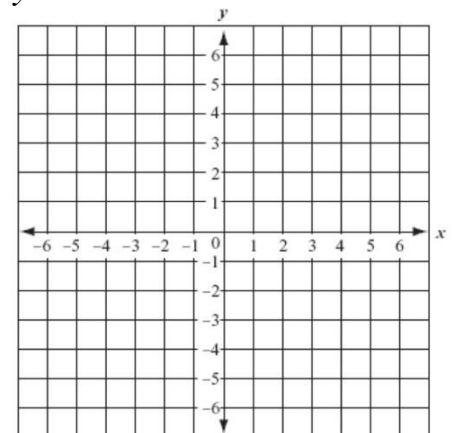


Can a person living 10 miles east and 5 miles north of Lorne receive the tower's signal?

Ex. 4 Write the standard form for the circle $x^2 + y^2 + 4x - 6y - 3 = 0$.

State the coordinates of its center and give the radius.

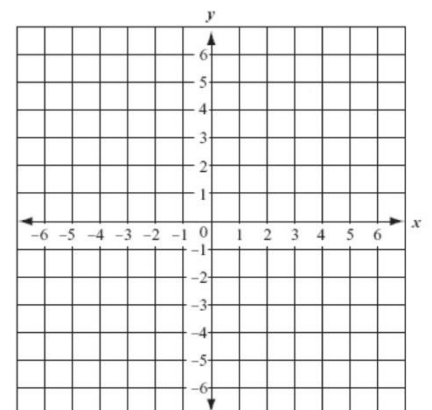
Then graph the circle.



Ex. 5 Write the standard form for the circle $x^2 + y^2 - 8x + 7 = 0$.

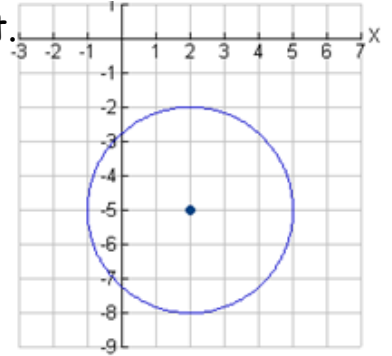
State the coordinates of its center and give the radius.

Then graph the circle.

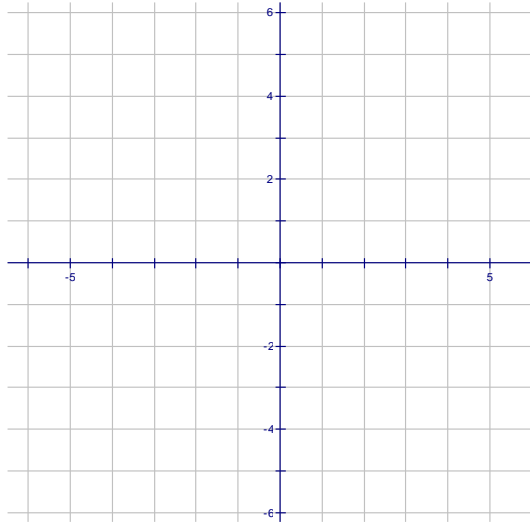


❖ In class practice.

1. Write the standard form of the circle graphed at the right.



2. Graph $(x - 1)^2 + (y - 5)^2 = 4$



3. Find the center and radius of the circle with the given equation.

a. $(x - 3)^2 + (y - 4)^2 = 36$ center: _____ radius: _____

b. $x^2 + y^2 - 6x - 4y - 12 = 0$ center: _____ radius: _____