Name:_____ Period:_____

Topic #1: Equations of Circles

Let's recall what we know about circles:

The point directly in the middle of a circle is called the_____.

A line going from the center of a circle to the edge of a circle is called the _____.

The equation of a circle:

The equation of a circle with its center at the origin look like this:

_____

r is the length of the _____ of the circle

x represents the _____ of a point on the circle, and y is the _____.

So if the circle from the bellwork has its center at the origin, its equation would be:

_____

Example 1:

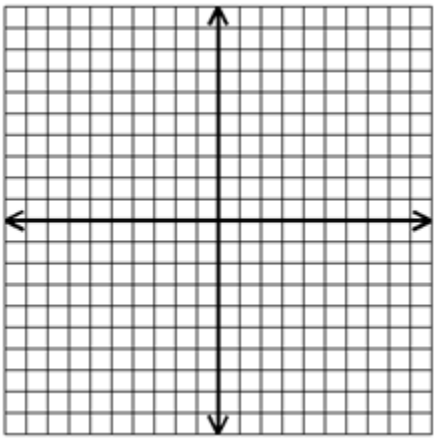
Graph the circle with equation:

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

What Point is the Center of this Circle? How long is the radius?

Center:_____

Radius:_____



Example 2:

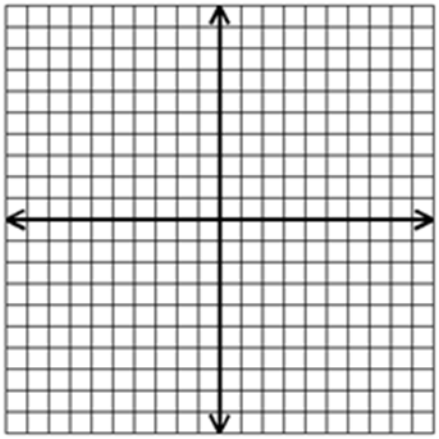
Graph the circle with equation:

$x^2 + y^2 = 49$

What Point is the Center of this Circle? How long is the radius?

Center:_____

Radius:_____



Example 3:

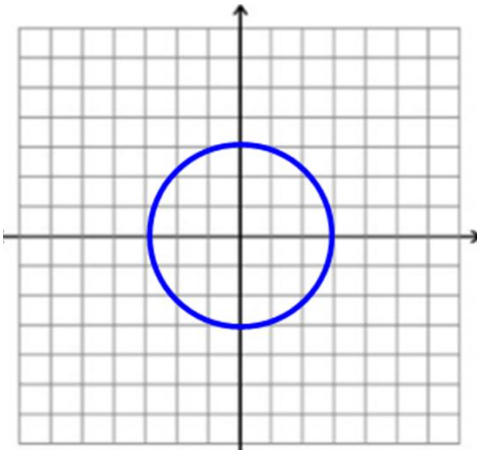
Write the equation for the circle graphed to the right.

What Point is the Center of this Circle? How long is the radius?

Center:_____

Radius:_____

Equation:_____



If a circle has a center that is not the origin, then its equation is:

_____

Where _____ is the center of this circle.

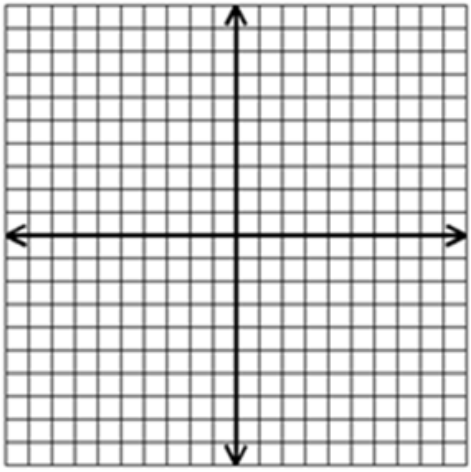
r is still the length of the _____

Example 4:

Graph the Circle with the following Equation:

$(x-2)^2 + (y-4)^2 = 36$

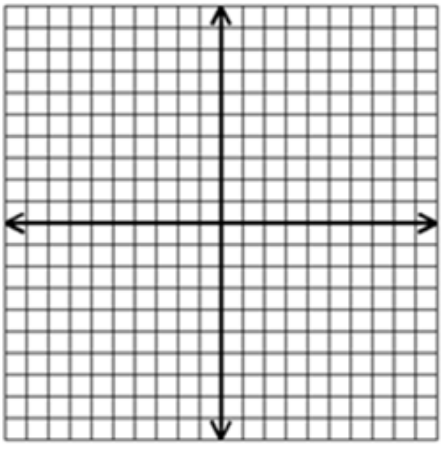
center: _____ radius: _____



Example 5:

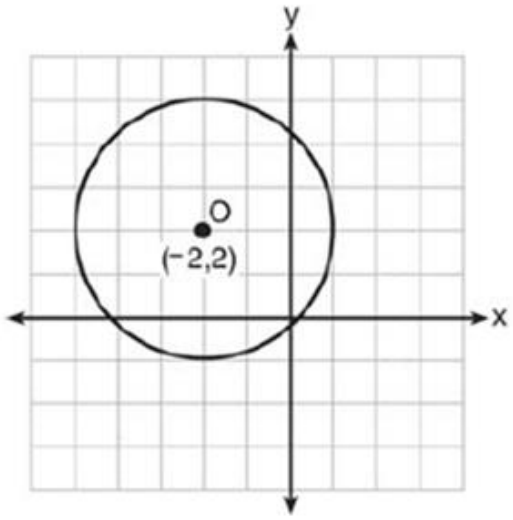
Graph the Circle with the following Equation: $x^2 + (y+5)^2 = 1$

center: _____ radius: _____



Example 6:

What is the equation for the circle on the graph?



Equation:_____

Closure:

In a circle equation the point (h, k) represents the _____ of the circle, and r represents the length of the _____.