

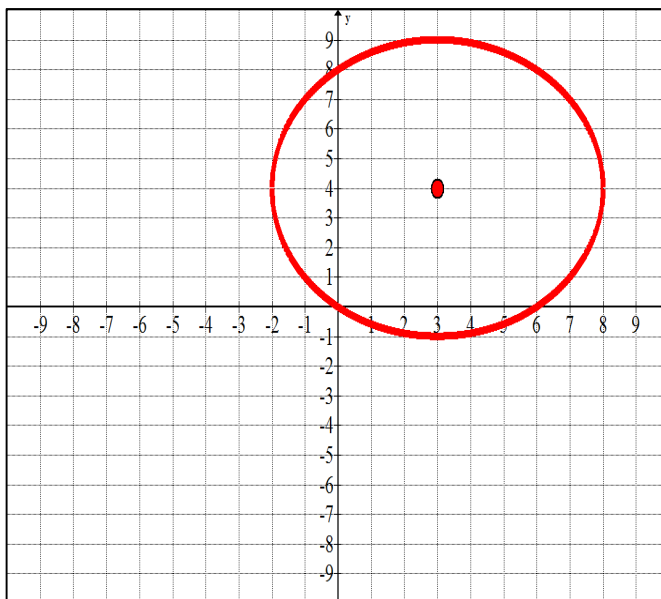
GRAPHING A CIRCLE IN YOUR CALCULATOR:

The graph shown is the graph of the circle

$$(x-3)^2 + (y-4)^2 = 5^2$$

1. What are the coordinates of the center?

2. What is the radius?



In order to graph this circle in our calculators, we need to take this equation and write it in function form (solve for y).

$$(x-3)^2 + (y-4)^2 = 5^2$$

$$(y-4)^2 = 5^2 - (x-3)^2$$

$$y-4 = \sqrt{5^2 - (x-3)^2}$$

$$y = \sqrt{5^2 - (x-3)^2} + 4$$

Graph this equation in your calculator.

In order to see the graph, you will have to change the window:

MENU

4. ZOOM

1. SETTINGS

XMin: -10

XMax: 10

YMin: -10

YMax: 10

This graph does not look like a circle. Why not?

1. Your graph screen is not a square, it is a rectangle. The distance between the X's are more spaced out than the Y's, so the graph window is **skewed**. That is why your circle looks more like an oval (ellipse).

2. You only have the top of the circle! Why? Because you typed in $y = \sqrt{5^2 - (x-3)^2} + 4$ instead of $y = \pm\sqrt{5^2 - (x-3)^2} + 4$. You can't type this in the correct way, because $y = \pm\sqrt{\quad}$ since it is not a function (won't pass a vertical line test).

So to graph a circle in your calculator, we have to input it as two separate functions:

$$y = \sqrt{5^2 - (x-3)^2} + 4$$

AND

$$y = -\sqrt{5^2 - (x-3)^2} + 4$$

Add the second version of this graph by clicking on the \gg in the bottom right corner of your graph,

Scroll down to f2(x)

And input the negative version.