

Example: Graph a Circle**Problem:**

Graph the circle defined by the quantity x minus 1 squared plus the quantity y plus 5 squared equals 9.

Solution:

The first point we will graph is the center. Knowing the general equation of a circle, rewrite the given equation with subtraction in each set of parentheses and a squared term on the right side. This new equation is the quantity x minus 1 squared plus the quantity y minus negative 5 squared equals 3 squared.

Using the information in this circle, we know that the center is at the point 1, negative 5.

Plot the center point.

The next bit of information we need is the radius. Again, since we know the general equation of a circle, we know that the radius is 3.

Plot points 3 units to the right, to the left, up and down from the center. These four points will all be on the circle.

The last step is to draw the circle.

This is the graph of the circle defined by the quantity x minus 1 squared plus the quantity y plus 5 squared equals 9.