Here's an example:

A circle has the equation $x^2 + y^2 + x - 4y + 4 = 0$. Graph the circle using the center (h,k) and radius r. Find the intercepts, if any, of the graph.

$$x^2 + x \qquad + y^2 - 4y \qquad = -4$$

$$x^2 + x + \left(\frac{1}{2}\right)^2 + y^2 - 4y + 2^2 = -4 + \frac{1}{4} + 4$$

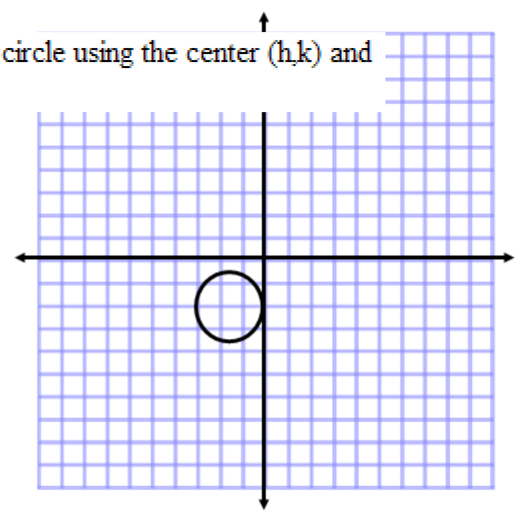
$$\left(x + \frac{1}{2}\right)^2 + (y - 2)^2 = \frac{1}{4}$$

This is a circle, of radius $\sqrt{\frac{1}{4}} = \frac{1}{2}$, centered at (-1/2, 2)

When you graph it, you see that it JUST touches the *y*-axis at (0, 2)

Here's the one you asked about:

A circle has the equation $x^2 + y^2 + 3x + 4y + 4 = 0$. Graph the circle using the center (h,k) and radius r. Find the intercepts, if any, of the graph.



$$x^2 + 3x \qquad + y^2 + 4y \qquad = -4$$

$$x^2 + 3x + \left(\frac{3}{2}\right)^2 + y^2 + 4y + 2^2 = -4 + \frac{9}{4} + 4$$

$$\left(x + \frac{3}{2}\right)^2 + (y + 2)^2 = \frac{9}{4}$$

This is a circle of radius $\sqrt{\frac{9}{4}} = \frac{3}{2}$, centered at $\left(-\frac{3}{2}, -2\right)$. It just barely touches the *y*-axis at $(0, -2)$. Circles that touch in two or more spots can be more involved, but these two aren't that involved. You get the intercepts just by correctly drawing the circle.