Find the center and radius of the given circle and graph it.

$$x^2 + y^2 + 10y + 21 = 0$$

Solution:

Reduce the following equation to its canonical form

$$x^2 + y^2 + 10y + 21 = 0$$

$$x^2 + (y^2 + 10y + 25) - 4 = 0$$

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

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

Then

$$C(0, -5) \qquad R = 2$$

Answer: $C(0, -5)$ $R = 2$