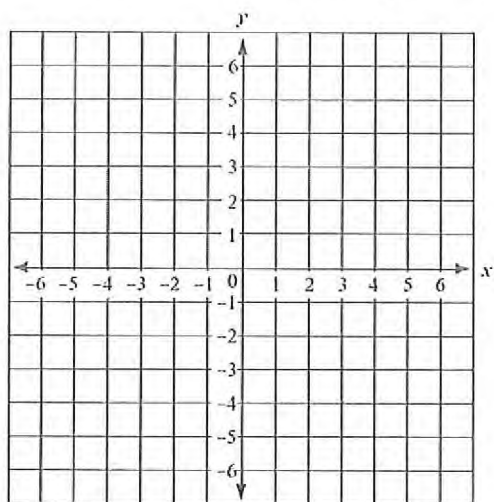


Part I: Graph the circle represented by the equation

$$x^2 + y^2 - 6x + 4y + 9 = 0.$$



Part II: Write the standard form equation of the circle with a center at $(-6, 5)$ and a point on the circle at $(0, 1)$. Then convert the equation to general form.

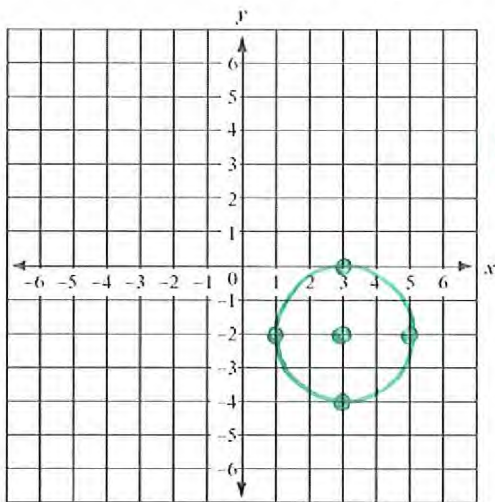
Unit 6 Practice #2

Key

#14

Part I: Graph the circle represented by the equation

$$x^2 + y^2 - 6x + 4y + 9 = 0.$$



$$(x^2 - 6x + 9) + (y^2 + 4y + 4) = -9 + 9 + 4$$

$$\left(\frac{-6}{2}\right)^2 = (-3)^2 = 9 \quad \left(\frac{4}{2}\right)^2 = (2)^2 = 4$$

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

Center = (3, -2)
radius = 2

Part II: Write the standard form equation of the circle with a center at (-6, 5) and a point on the circle at (0, 1). Then convert the equation to general form.

$$(x + 6)^2 + (y - 5)^2 = r^2$$

$$(0 + 6)^2 + (1 - 5)^2 = r^2$$

$$(6)^2 + (-4)^2 = r^2$$

$$36 + 16 = r^2$$

$$52 = r^2$$

$$(x + 6)^2 + (y - 5)^2 = 52$$

$$(x + 6)(x + 6) + (y - 5)(y - 5) = 52$$

$$x^2 + 6x + 6x + 36 + y^2 - 5y - 5y + 25 = 52$$

$$x^2 + 12x + y^2 - 10y + 61 = 52$$

$$x^2 + y^2 + 12x - 10y + 9 = 0$$