# 9-2 Additional Practice

## Circles

**Write an equation for a circle with the following radii and centered at the origin.**

**1.** Radius 3

$x^2 + y^2 = 9$

**2.** Radius 6

$x^2 + y^2 = 36$

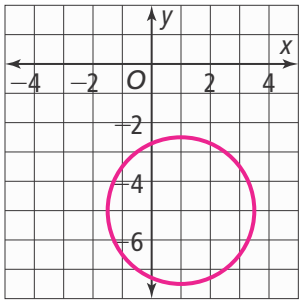
**3.** Radius 4

$x^2 + y^2 = 16$

**Write an equation for each circle. Sketch the graph.**

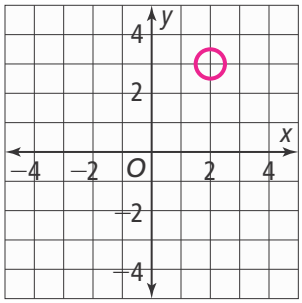
**4.** Center (1, –5) and radius 2.5

$(x - 1)^2 + (y + 5)^2 = 6.25$




**5.** Center (2, 3) and diameter 1

$(x - 2)^2 + (y - 3)^2 = \frac{1}{4}$




**6.** The town of Mercedes wants to build a circular pond in the park. They are planning on putting steps at the points (0, –1) and (8, 5), which correspond to the endpoints of a diameter of the pond. Find the equation of the circle they are creating so they can sketch out their plans.

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

**Rewrite the equation in standard form. Identify the center and radius.**

**7.** $x^2 + y^2 - 10x - 10y + 25 = 0$

$(x - 5)^2 + (y - 5)^2 = 25$

Center: (5, 5)

Radius: 5

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

$(x - 3)^2 + (y - 2)^2 = 9$

Center: (3, –2)

Radius: 3

**Solve the linear-quadratic system of equations.**

**9.** $\begin{cases} x^2 + y^2 - 16 = 0 \\ x - y + 4 = 0 \end{cases}$

(0, 4) and (–4, 0)

**10.** $\begin{cases} x^2 + y^2 - 18 = 0 \\ x - y = 0 \end{cases}$

(–3, –3) and (3, 3)

**11.** A student writes the equation of a circle with the center at (8.5, 0) and diameter 25 as $x^2 + (y - 8.5)^2 = 156.25$. Is she correct? Explain. She is incorrect. The values for $h$ and $k$ are reversed. The correct answer is $(x - 8.5)^2 + y^2 = 156.25$.