9-2 Additional Practice

Circles

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

1. Radius 3

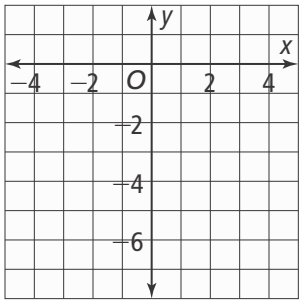
2. Radius 6

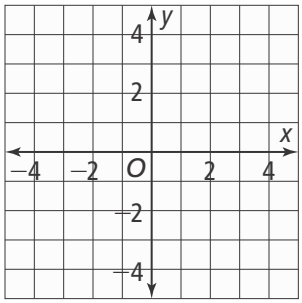
3. Radius 4

Write an equation for each circle. Sketch the graph.

4. Center (1, –5) and radius 2.5

5. Center (2, 3) and diameter 1





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.

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

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

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

Solve the linear-quadratic system of equations.

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

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

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.

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

$x^2 + y^2 = 36$

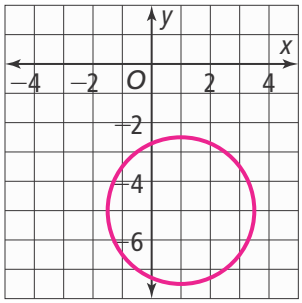
3. Radius 4

$x^2 + y^2 = 16$

Write an equation for each circle. Sketch the graph.

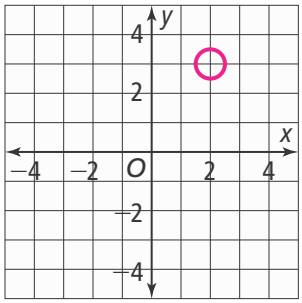
4. Center (1, –5) and radius 2.5

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



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 $(x - 8.5)^2 + y^2 = 156.25$.