

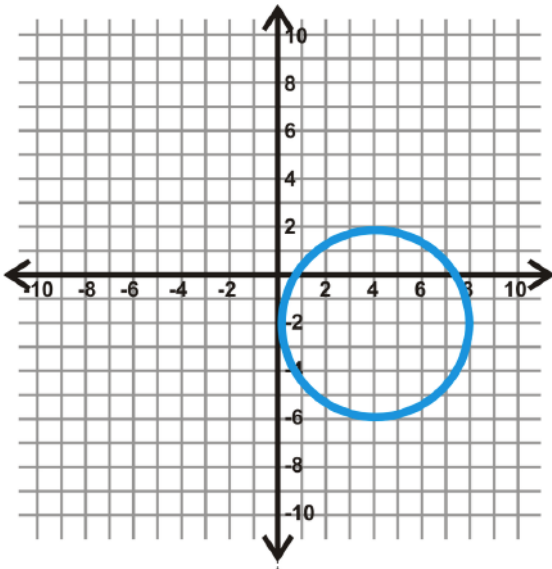
5.6 Equations of Circles

Objective: Students will be able to write the equation of a circle given the radius and center

Circles in the Coordinate Plane

There are three ways we are going to talk about circles today

Graph



Center Point and Radius

Center: (,) Radius: _____

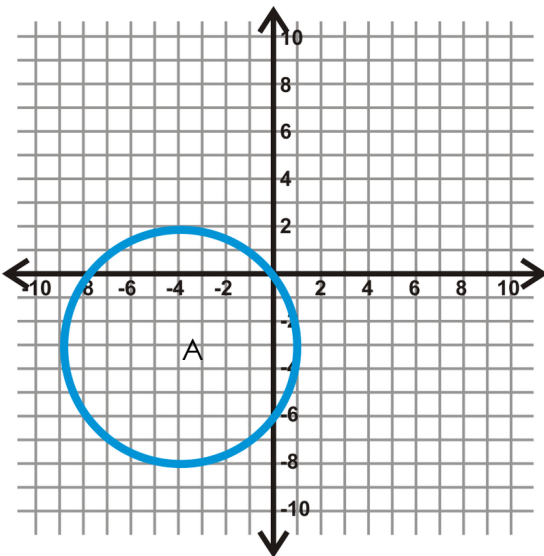
h k r

Equation

$$(x - h)^2 + (y - k)^2 = r^2$$

$$(x - \underline{\quad})^2 + (y - \underline{\quad})^2 = (\underline{\quad})^2$$

Find the equation of circle A



Center Point and Radius

Center: (,) Radius: _____

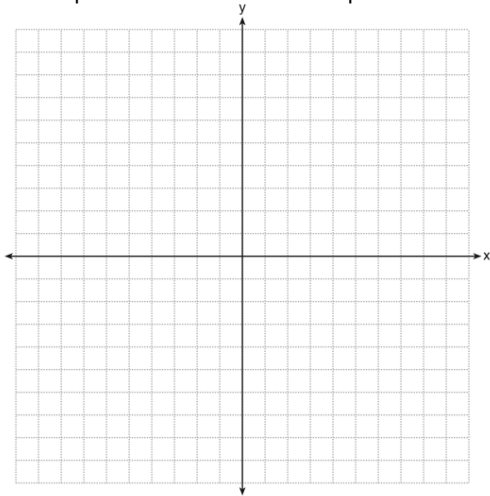
h k r

Equation

$$(x - h)^2 + (y - k)^2 = r^2$$

$$(x - \underline{\quad})^2 + (y - \underline{\quad})^2 = (\underline{\quad})^2$$

Graph and write the equation of the circle B with the center and radius stated below

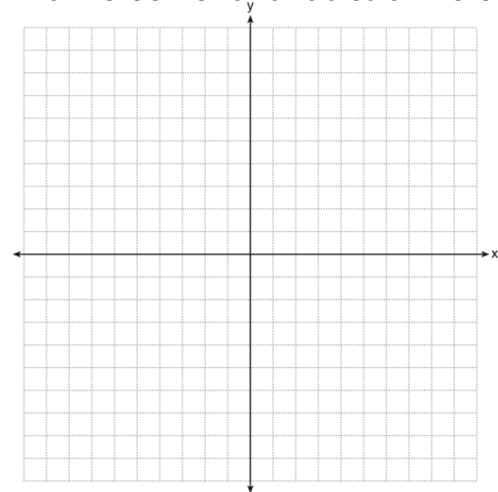


Center: $(-2, 5)$ Radius: 3

Equation

$$(x - h)^2 + (y - k)^2 = r^2$$

Find the center and radius of the circle with the equation given below and then graph.

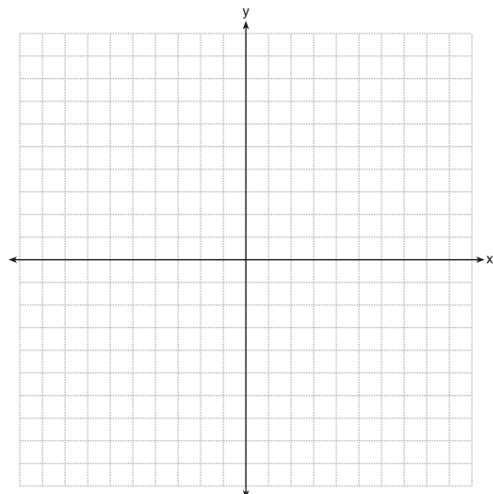


Center: (,) Radius: _____

Equation

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

Find the center and radius of the circle with the equation given below and then graph.



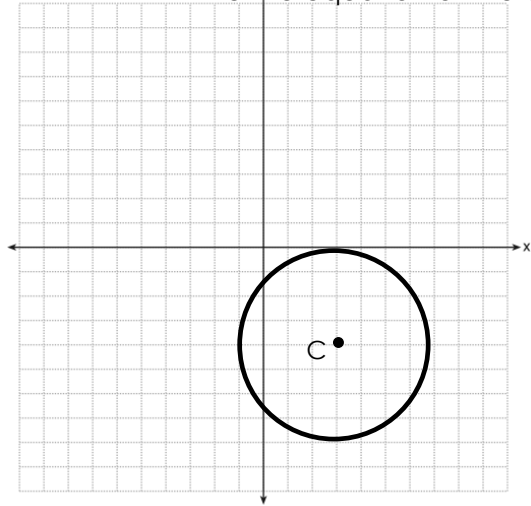
Center: (,) Radius: _____

Equation

$$x^2 + (y + 2)^2 = 36$$

Independent Practice

Write the equation of the circle C and state the center and radius

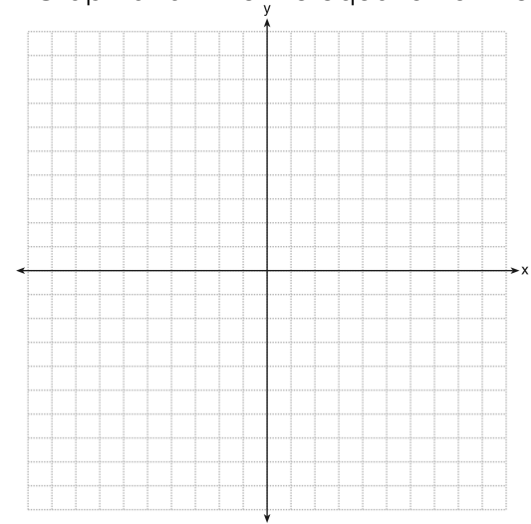


Center: (,) Radius: _____

Equation

$$(x - h)^2 + (y - k)^2 = r^2$$

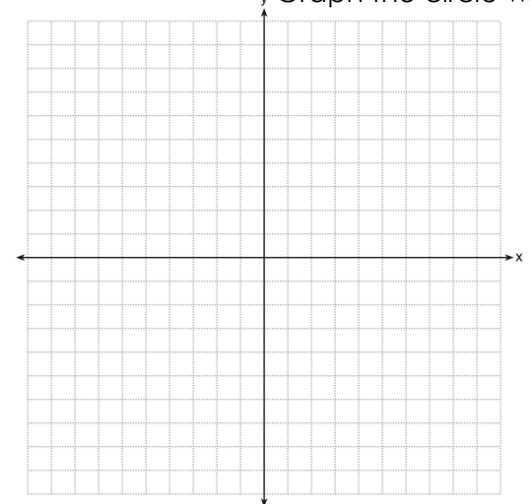
Graph and write the equation of the circle D with the center and radius stated below



Center: (-3, 2) Radius: 4

Equation

Graph the circle with the equation given below.



Center: (,) Radius: _____

Equation

$$x^2 + y^2 = 25$$

What is an equation of the circle with a radius of 5 and center at $(1, -4)$?

- 1) $(x + 1)^2 + (y - 4)^2 = 5$
- 2) $(x - 1)^2 + (y + 4)^2 = 5$
- 3) $(x + 1)^2 + (y - 4)^2 = 25$
- 4) $(x - 1)^2 + (y + 4)^2 = 25$

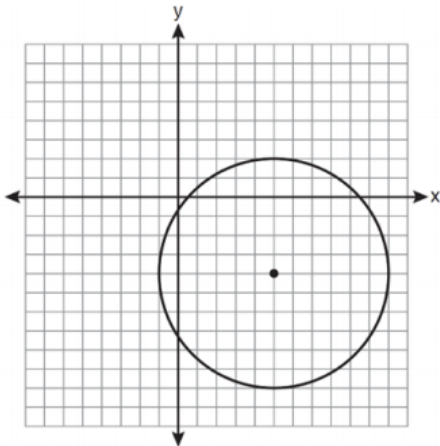
What is an equation of a circle with center $(7, -3)$ and radius 4?

- 1) $(x - 7)^2 + (y + 3)^2 = 4$
- 2) $(x + 7)^2 + (y - 3)^2 = 4$
- 3) $(x - 7)^2 + (y + 3)^2 = 16$
- 4) $(x + 7)^2 + (y - 3)^2 = 16$

Write the equation of circle with a radius of 9 and a center located at $(3, 1)$

State the radius and center of the circle with the equation $(x - 8)^2 + (y + 3)^2 = 144$

Write an equation of the circle graphed in the diagram below.



Write an equation for circle O shown on the graph below.

