

**Objective:** Write and graph a circle given a center and radius.

**Warm Up:**

Find the arc length and the area of a sector if given a  $40^\circ$  arc of a circle with a radius of 6 cm.

Standard Form for a Circle:

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

Center:

Radius:

**Example 1:** Determine the center and the radius of the circle

A.)  $x^2 + y^2 = 49$

B.)  $25 - x^2 = y^2$

C.)  $(x - 2)^2 + (y - 8)^2 = 25$

D.)  $(x + 4)^2 + (y - 3)^2 = 16$

**Example 2:** Write the equation of a circle given the following information:

A.) Center: (0,0)

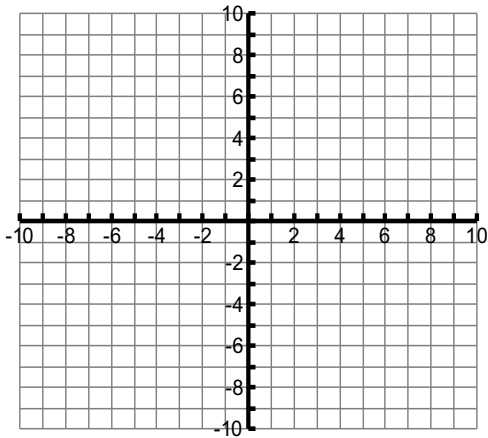
B.) Center: (4,5)

Point: (-5, 0)

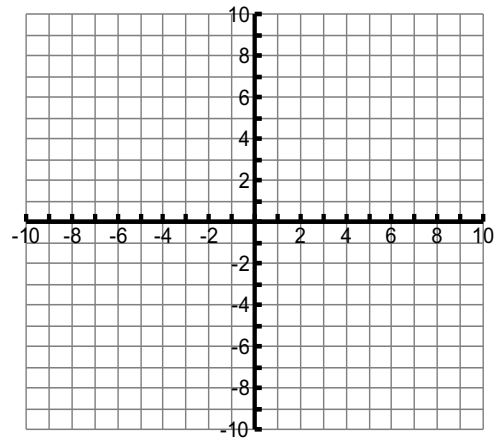
Radius: 4

**Example 3:** Given the equation of a circle, create its corresponding graph. Then draw in a diameter and list its endpoints.

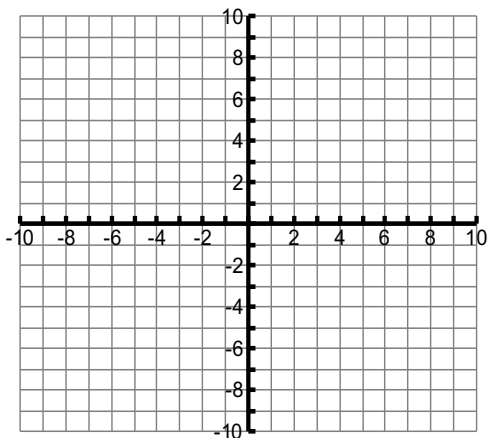
A.)  $x^2 + y^2 = 25$



B.)  $(x - 3)^2 + (y + 2)^2 = 1$



C.)  $x^2 + (y - 4)^2 = 16$



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

