

Do you know HOW?

What is the standard equation of each circle?

- center (0, 0); $r = 4$ $x^2 + y^2 = 16$
- center (1, -1); $r = \sqrt{5}$ $(x-1)^2 + (y+1)^2 = 5$

What is the center and radius of each circle?

- $(x-8)^2 + y^2 = 9$ C: (8, 0) $r = 3$
- $(x+2)^2 + (y-4)^2 = 7$ C: (-2, 4) $r = \sqrt{7}$

Do you UNDERSTAND? MATHEMATICAL PRACTICES

- What is the least amount of information that you need to graph a circle? To write the equation of a circle?
- Suppose you know the center of a circle and a point on the circle. How do you determine the equation of the circle?

7. Error Analysis A student says that the center of a circle with equation $(x-2)^2 + (y+3)^2 = 16$ is (-2, 3). What is the student's error?
it should be (2, -3)

Write the standard equation of each circle. a) $x^2 + (y-3)^2 = 49$

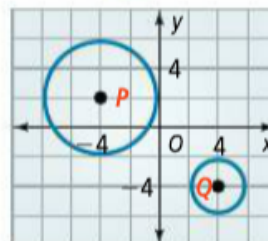
See Problem 1.

- center (2, -8); $r = 9$
- center (0, 3); $r = 7$
- center (5, -1); $r = 12$
- center (-6, 3); $r = 8$
- center (0, 0); $r = 4$
- center (-4, 0); $r = 3$
- center (0.2, 1.1); $r = 0.4$
- center (-9, -4); $r = \sqrt{5}$ $(x+9)^2 + (y+4)^2 = 5$
- center (-1, -1); $r = 1$

Write a standard equation for each circle in the diagram at the right.

See Problem 2.

- ⊙P $(x+4)^2 + (y-2)^2 = 16$
C = (-4, 2) $r = 4$
- ⊙Q



Write the standard equation of the circle with the given center that passes through the given point.

- center (-2, 6); point (-2, 10)
- center (1, 2); point (0, 6)
- center (7, -2); point (1, -6)
- center (-10, -5); point (-5, 5)
- center (6, 5); point (0, 0)
- center (-1, -4); point (-4, 0)

$$r = \sqrt{(6-0)^2 + (5-0)^2} = \sqrt{6^2 + 5^2} = \sqrt{36+25} = \sqrt{61}$$

$$(x-6)^2 + (y-5)^2 = 61$$

$$r = \sqrt{(1-7)^2 + (-6+2)^2} = \sqrt{(-6)^2 + (-4)^2} = \sqrt{36+16} = \sqrt{52}$$

$$(x-7)^2 + (y+2)^2 = 52$$