

$$x = \sqrt{4}$$

$$x = 2$$

$$\frac{24}{5} = \frac{5x}{5}$$

$$4.8 = x$$



Students, draw anywhere on this slide!

Pear Deck Interactive Slide
Do not remove this bar



7.

$$12^2 = x(x+10)$$

$$144 = x^2 + 10x$$

$$-144 = x^2 + 10x - 144$$

$$1x^2 + 10x - 144$$

$$ax^2 + bx + c$$

$$a=1 \quad b=10 \quad c=-144$$

$$-10 \pm \sqrt{10^2 - 4(1)(-144)}$$

$$-10 \pm \sqrt{100 + 576}$$

$$-10 \pm \sqrt{676}$$

$$-10 \pm 26$$

$$\frac{-10 + 26}{2} = 8$$

$$\frac{-10 - 26}{2} = -18$$

$$x = 8$$

$$x = -18$$



$$(x-8)(x+18)$$

$$x-8=0 \quad x=8$$

$$x+18=0 \quad x=-18$$



Students, draw anywhere on this slide!

Pear Deck Interactive Slide
Do not remove this bar



Core Concept

Standard Equation of a Circle

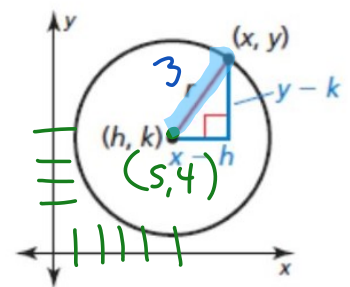
Let (x, y) represent any point on a circle with center (h, k) and radius r . By the Pythagorean Theorem (Theorem 9.1),

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

This is the standard equation of a circle with center (h, k) and radius r .

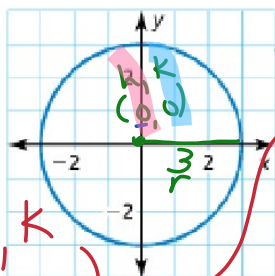
center (h, k) radius r

$(5, 4)$ 3





Students, draw anywhere on this slide!

Pear Deck Interactive Slide
Do not remove this bar

Write the standard equation of each circle.

center (0, 0) r = 3

a. the circle shown at the left

b. a circle with center (0, -9) and radius 4.2

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

$$(x-0)^2 + (y-0)^2 = 3^2$$

$$x^2 + y^2 = 9$$

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

$$(x-0)^2 + (y+9)^2 = 4.2^2$$

$$x^2 + (y+9)^2 = 17.64$$

$$(h, k) = (0, -9)$$

$$r = 4.2$$



Students, draw anywhere on this slide!

Pear Deck Interactive Slide
Do not remove this bar

Write the standard equation of the circle with the given center and radius.

1. center: (0, 0), radius: 2.5

2. center: (-2, 5), radius: 7

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

$$(x+2)^2 + (y-5)^2 = 7^2$$

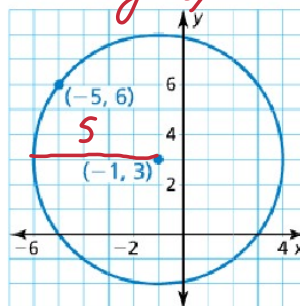
$$(x+2)^2 + (y-5)^2 = 49$$

The point (-5, 6) is on a circle with center (-1, 3). Write the standard equation of the circle.

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

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

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



Students, draw anywhere on this slide!

Pear Deck Interactive Slide
Do not remove this bar

The equation of a circle is $x^2 + y^2 - 8x + 4y - 16 = 0$. Find the center and the radius of the circle. Then graph the circle.