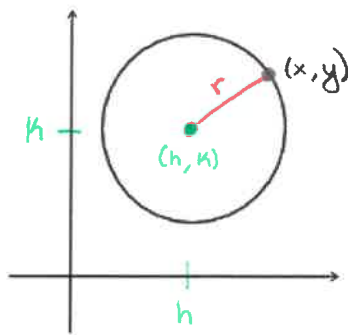


Geometry  
10.8 Equations of Circles



\* distance formula

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$r = \sqrt{(x-h)^2 + (y-k)^2}$$

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

standard equation

if center is  $(0,0)$  then

$$x^2 + y^2 = r^2$$

1. Write the standard equation of the circle with center  $(-4, 0)$  and radius 7.

$(h, k)$

$$(x - (-4))^2 + (y - 0)^2 = 7^2$$

$$(x+4)^2 + y^2 = 49$$

2. Write the standard equation of the circle with center  $(-1, -3)$  and radius 6.

$$(x - (-1))^2 + (y - (-3))^2 = 6^2$$

$$(x+1)^2 + (y+3)^2 = 36$$

3. The point  $(1, 2)$  is on a circle whose center is  $(5, -1)$ . Write the standard equation of the circle.  $(x, y)$   $(h, k)$

$$r^2 = (1-5)^2 + (2-(-1))^2$$

$$r = \sqrt{16 + 9}$$

$$r = \sqrt{25}$$

$$r = 5$$

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

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

Geometry  
10.6 Equations of Circles

4. Give the center and radius of the circle whose equation is  $(x - 5)^2 + (y - 1)^2 = 25$

center:  $(5, 1)$

radius = 5

5. Give the center and radius of the circle whose equation is  $(x + 2)^2 + (y - 3)^2 = 36$

center:  $(-2, 3)$

radius = 6

6. Give the center and radius of the circle whose equation is  $(x - \frac{1}{2})^2 + (y + \frac{3}{4})^2 = \frac{1}{4}$

center:  $(\frac{1}{2}, -\frac{3}{4})$

radius =  $\frac{1}{2}$

7. Graph the equation;  $(x + 3)^2 + y^2 = 9$

center:  $(-3, 0)$

radius = 3