

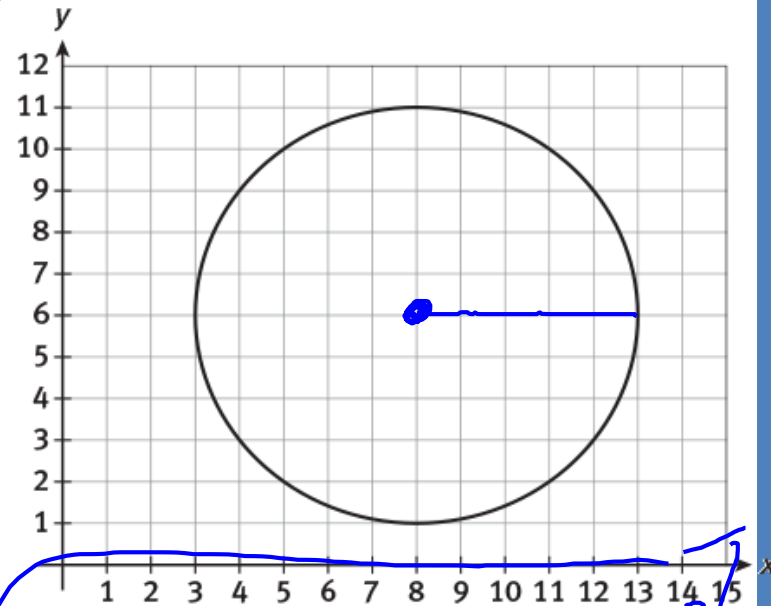
Tuesday, February 12, 2019

- Warm-up

- Find the coordinates of the center of the circle: (h, k) $(8, 6)$
- Find the radius of the circle: $r = 5$
- Write the equation of the circle using this model: $(x - h)^2 + (y - k)^2 = r^2$

- The Equation of Circles

- Application of Circles



$(x - 8)^2 + (y - 6)^2 = 5^2$

Objectives

Content: I will review circle properties and equations.

Social: I will work with my group, listening to ideas from others.

Language: I will write clear notes about circles.

Circles

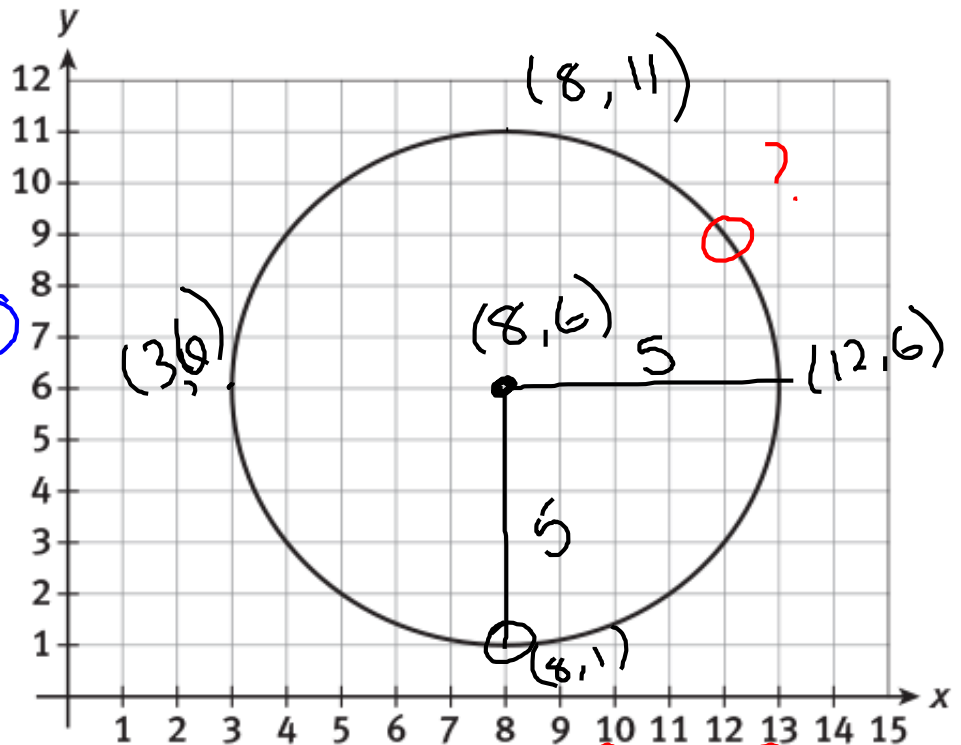
- Find the coordinates of the center of the circle: (h, k)
- Find the radius of the circle: r
- Write the equation of the circle using this model:
 $(x - h)^2 + (y - k)^2 = r^2$

formula has -

- Area $A = \pi r^2$

- Circumference
perimeter of circle = $C = 2\pi r$

- Other knowledge? radius \rightarrow distance from center to side



$$(x - 8)^2 + (y - 6)^2 = 5^2$$

center (8, 6)

radius: 5

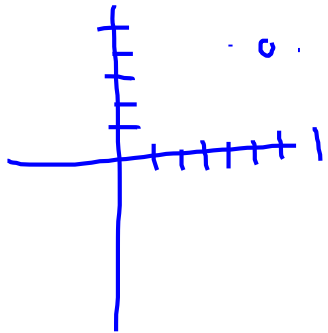
Together Practice Problems with Circles

$(6,5)$ $(8,5)$

center: $(7,5)$

radius: 1

$$(x-7)^2 + (y-5)^2 = 1^2$$



1. Describe the circle given by the equation $(x-7)^2 + (y-8)^2 = 9$.

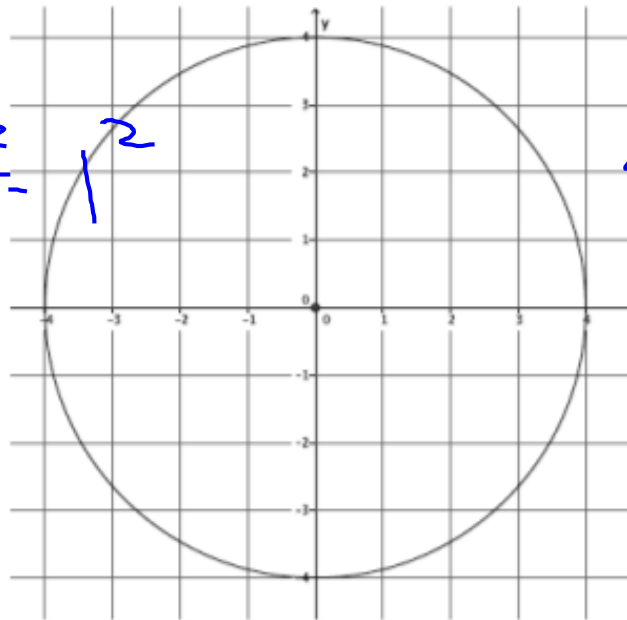
center = $(7, 8)$
 radius = 3

2. Write the equation for a circle with center $(0, -4)$ and radius 8.

$$(x-0)^2 + (y-(-4))^2 = 8^2$$

$$x^2 + (y+4)^2 = 64$$

3. Write the equation for the circle shown below.



center $(0,0)$
 radius = 4

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

$$x^2 + y^2 = 16$$

4. A circle has a diameter with endpoints at $(6,5)$ and $(8,5)$. Write the equation for the circle.

Brain Break

Individual Practice

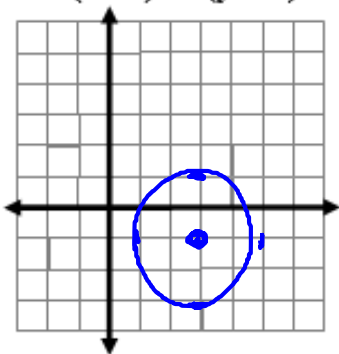
$$(x-0)^2$$

CPMath 2 Circles Worksheet

Name _____

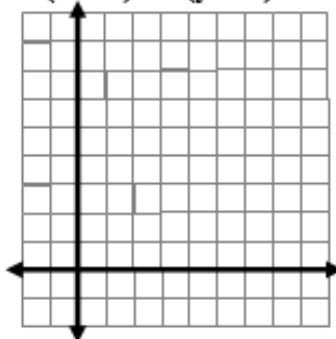
1) Graph the following circle:

a. $(x-3)^2 + (y+1)^2 = 4$

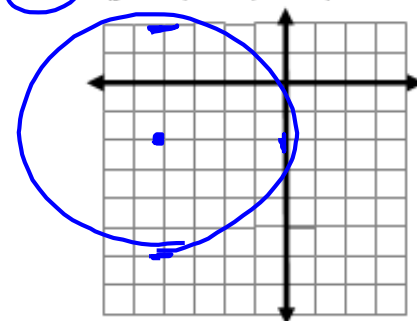


$(3, -1)$
 $r = \sqrt{4}$
 $= 2$

b. $(x-2)^2 + (y-5)^2 = 9$



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



$\sqrt{16}$
 $= 4$

2) For each circle: Identify its center and radius.

a. $(x+3)^2 + (y-1)^2 = 4$

Center: _____

Radius: _____

b. $x^2 + (y-3)^2 = 18$

Center: $(0, 3)$

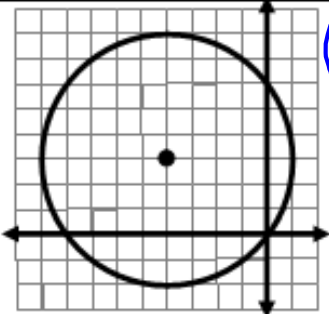
Radius: $\sqrt{18}$ 4.242

c. $(y+8)^2 + (x+2)^2 = 72$

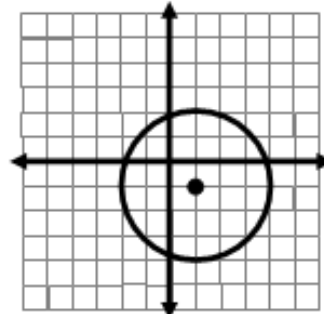
Center: _____

Radius: _____

3) Write the equation of the following circles:



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



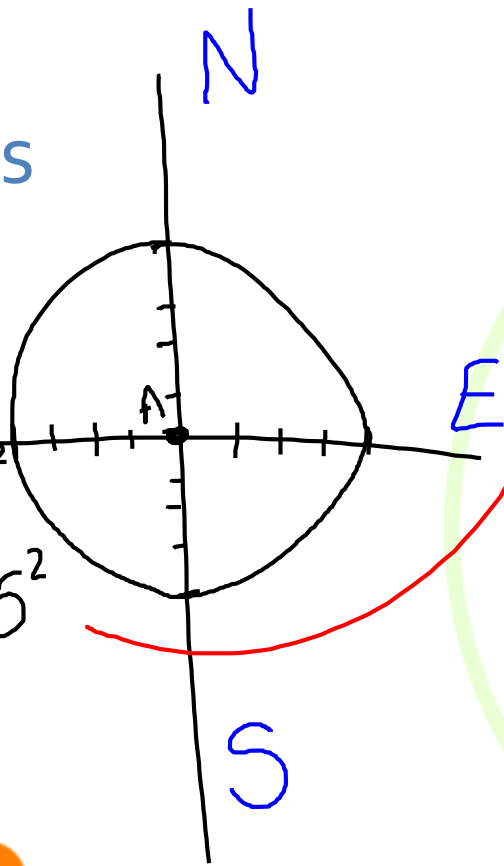
Brain Break

Applications

(A) $x^2 + y^2 = 16$

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

(C) $(x-4)^2 + (y+4)^2 = 5^2$



$(x-h)^2 + (y-k)^2 = r^2$
Moore? $(8, -6)$ **Yes**

$(8-4)^2 + (-6+4)^2 \leq 5^2$

$4^2 + (-2)^2 \leq 5^2$

$16 + 4 \leq 25$

$20 \leq 25$

Yes

