

Student: \_\_\_\_\_  
Date: \_\_\_\_\_

Instructor: Andreas Lazari  
Course: Math1111-Summer2018

Assignment: Section 2.8 Homework

1. Find the distance between the pair of points.

(1,2) and (10,14)

The distance between the points is 15 units.  
(Round to two decimal places as needed.)

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

$$d = \sqrt{(10-1)^2 + (14-2)^2} = \sqrt{9^2 + 12^2} = \sqrt{81 + 144} = \sqrt{225} = 15$$

2. Find the distance between (0, -9) and (2,9).

The distance is 18.11 units.  
(Round to two decimal places as needed.)

$$d = \sqrt{(2-0)^2 + (9-(-9))^2} = \sqrt{2^2 + 18^2} = \sqrt{4 + 324} = \sqrt{328} = 18.11$$

3. Find the midpoint of the line segment with the given endpoints.

(6,2) and (10,8)

The midpoint of the segment is (8,5).  
(Type an ordered pair.)

$$M.P = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$
$$\left( \frac{6+10}{2}, \frac{2+8}{2} \right) = (8, 5)$$

4. Find the midpoint of the line segment whose endpoints are given.

(-7,1), (-9,-1)

The midpoint is (-8,0).  
(Simplify your answer.)

$$M.P = \left( \frac{-7-9}{2}, \frac{1-1}{2} \right) = (-8, 0)$$

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

Center (0,0), r = 4

The equation for the circle in standard form is  $x^2 + y^2 = 16$ .  
(Simplify your answer.)

standard form  $(x-h)^2 + (y-k)^2 = r^2$   
where (h,k) is the center of the circle.

$$(x-0)^2 + (y-0)^2 = 4^2 \Rightarrow x^2 + y^2 = 16$$

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

Center (4, -3), r = 5

Type the standard form of the equation of the circle.

$(x-4)^2 + (y+3)^2 = 25$  (Simplify your answer.)

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

$$(x-4)^2 + (y+3)^2 = 25$$

7. Give the center and radius of the circle described by the equation and graph the equation. Use the graph to identify the relation's domain and range.

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

$$(h, k) = (0, 0) \text{ and } r = 3$$

Use the graphing tool to graph the equation.

What is the domain?

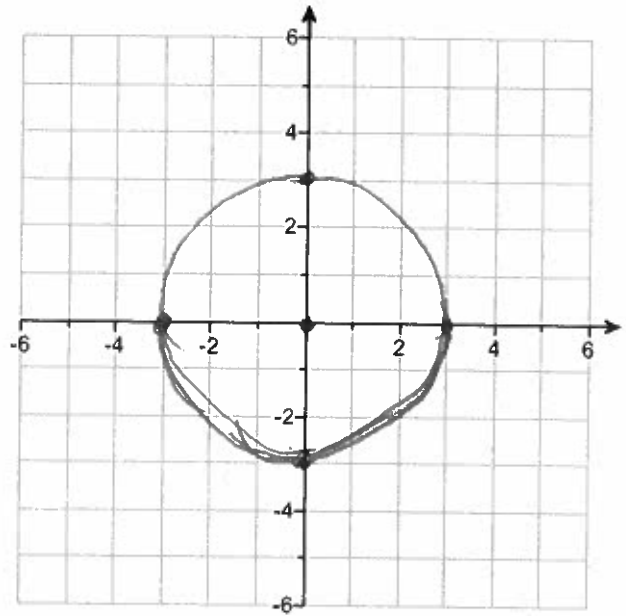
The domain is  $[-3, 3]$ .

(Type your answer in interval notation.)

What is the range?

The range is  $[-3, 3]$ .

(Type your answer in interval notation.)



8. Give the center and radius of the circle described by the equation and graph the equation. Use the graph to identify the domain and range.

$$(x + 2)^2 + (y - 6)^2 = 16$$

$$(h, k) = (-2, 6) \text{ and } r = 4$$

The center is  $(-2, 6)$ .

(Type an ordered pair. Simplify your answer.)

The radius is  $4$ .

(Type an integer or a simplified fraction.)

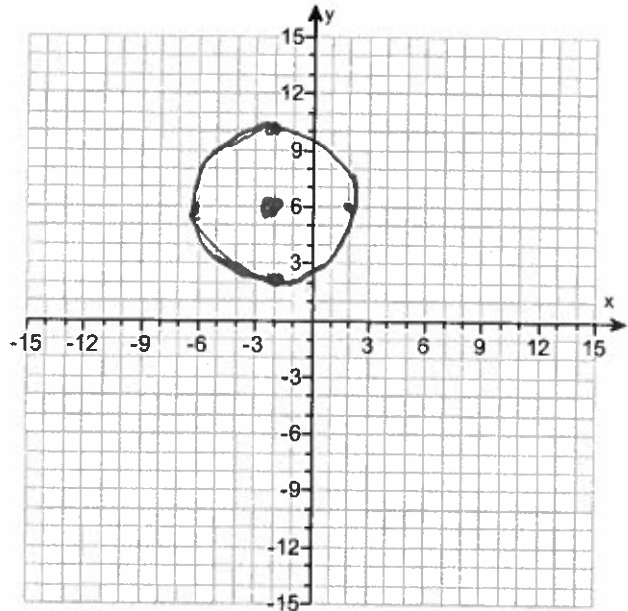
Graph the circle.

Express the domain of the relation in interval notation.

$[-6, 2]$

Express the range of the relation in interval notation.

$[2, 10]$



9. Give the center and radius of the circle described by the equation and graph the equation. Use the graph to identify the domain and range.

$$(x + 1)^2 + y^2 = 16$$

$$(h, k) = (-1, 0)$$

The center is  $(-1, 0)$  and  $r = 4$   
(Type an ordered pair. Simplify your answer.)

The radius is 4.  
(Type an integer or a simplified fraction.)

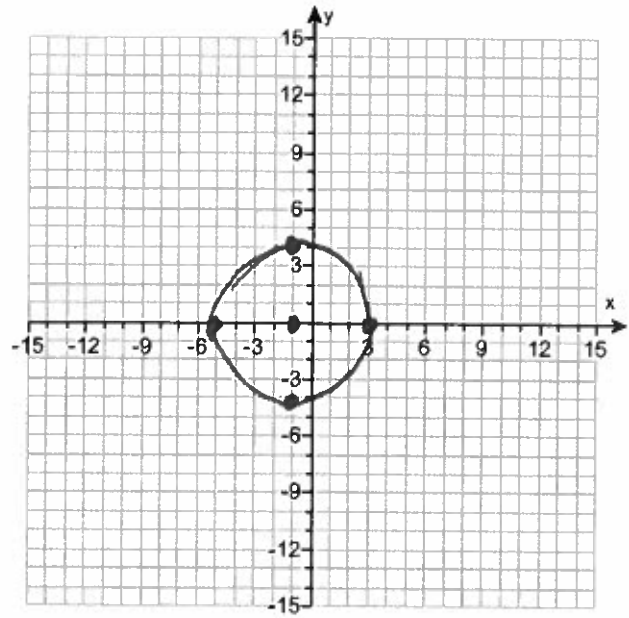
Graph the circle.

Express the domain of the relation in interval notation.

$$\underline{[-5, 3]}$$

Express the range of the relation in interval notation.

$$\underline{[-4, 4]}$$



1. 15

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2. 18.11

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3. (8,5)

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4. (-8,0)

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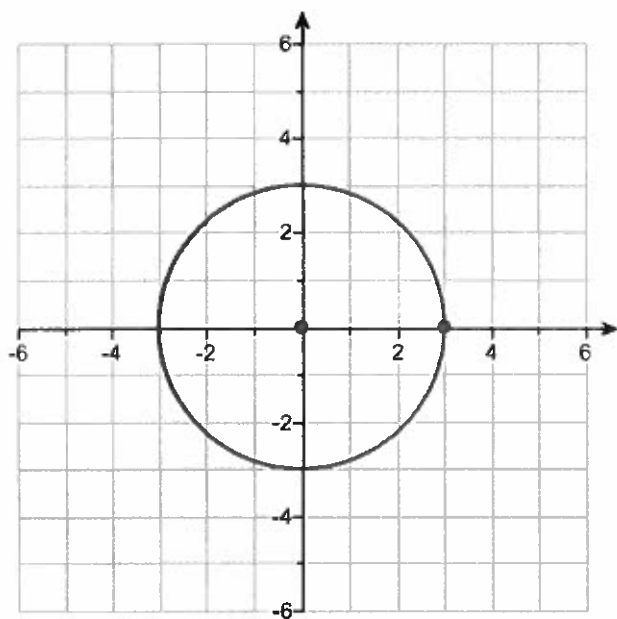
5.  $x^2 + y^2 = 16$

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6.  $(x - 4)^2 + (y + 3)^2 = 25$

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7.



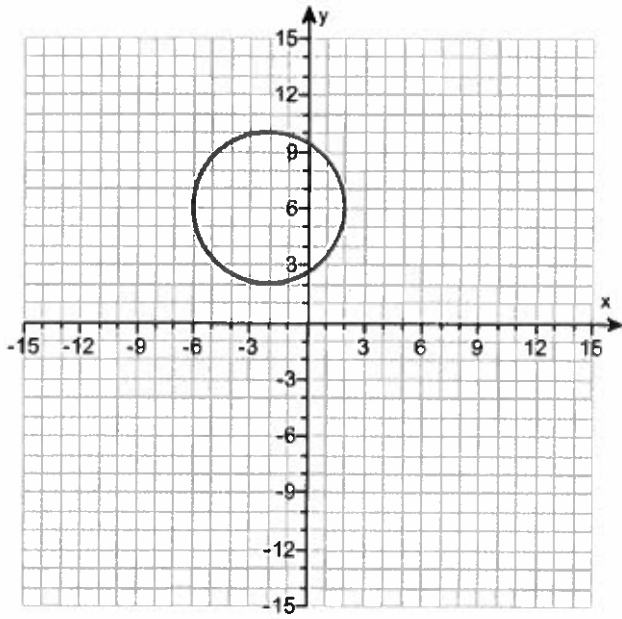
[-3,3]

[-3,3]

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8.  $(-2,6)$

4



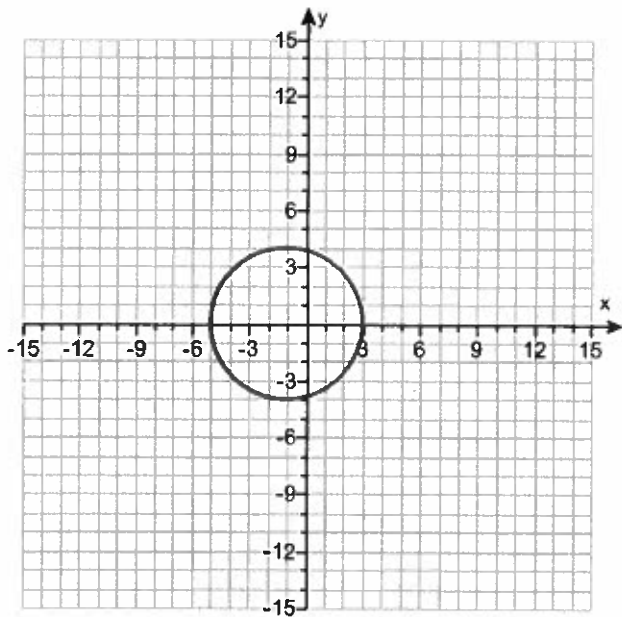
$[-6,2]$

$[2,10]$

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9.  $(-1,0)$

4



$[-5,3]$

$[-4,4]$

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