

Center: $(0,0)$
radius = 3

x int: $x = \pm 3$
 $(-3,0) + (3,0)$

y int: $y = \pm 3$
 $(0,-3) + (0,3)$

Domain:

$$\{x \mid -3 \leq x \leq 3, x \in \mathbb{R}\}$$

Range:

$$\{y \mid -3 \leq y \leq 3, y \in \mathbb{R}\}$$

Equation:

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

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

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

Equations of Circles Center (0, 0)

Name Answer Key

Worksheet #2

Date Nov. 9 / 10 Period

Use the information provided to write the standard form equation of each circle. Determine the x-intercepts, y-intercepts, Domain, and Range.

1) Center: (0, 0) x-ints => -7 and 7
Radius: 7 y-ints => -7 and 7
 $x^2 + y^2 = r^2$
 $x^2 + y^2 = (7)^2$ D: $\{x | -7 \leq x \leq 7, x \in \mathbb{R}\}$
 $x^2 + y^2 = 49$ R: $\{y | -7 \leq y \leq 7, y \in \mathbb{R}\}$

2) Center: (0, 0) x-ints => -12 and 12
Radius: 12 y-ints => -12 and 12
 $x^2 + y^2 = r^2$ D: $\{x | -12 \leq x \leq 12, x \in \mathbb{R}\}$
 $x^2 + y^2 = (12)^2$ R: $\{y | -12 \leq y \leq 12, y \in \mathbb{R}\}$
 $x^2 + y^2 = 144$

3) Center: (0, 0) x-ints => -14 and 14
Radius: 14 y-ints => -14 and 14
 $x^2 + y^2 = r^2$
 $x^2 + y^2 = (14)^2$ D: $\{x | -14 \leq x \leq 14, x \in \mathbb{R}\}$
 $x^2 + y^2 = 196$ R: $\{y | -14 \leq y \leq 14, y \in \mathbb{R}\}$

4) Center: (0, 0) x-ints => -10 and 10
Radius: 10 y-ints => -10 and 10
 $x^2 + y^2 = r^2$ D: $\{x | -10 \leq x \leq 10, x \in \mathbb{R}\}$
 $x^2 + y^2 = (10)^2$ R: $\{y | -10 \leq y \leq 10, y \in \mathbb{R}\}$
 $x^2 + y^2 = 100$

Use the information provided to write the standard form equation of each circle. Hint: What is the radius???

5) Center: (0, 0)

Point on Circle: (-1, -8)

$$\begin{aligned}x^2 + y^2 &= r^2 \\ (-1)^2 + (-8)^2 &= r^2 \\ 1 + 64 &= r^2\end{aligned}$$

$$\boxed{65 = r^2}$$

EQUATION
 $x^2 + y^2 = 65$

7) Center: (0, 0)

Point on Circle: (-16, 4)

$$\begin{aligned}x^2 + y^2 &= r^2 \\ (-16)^2 + (4)^2 &= r^2 \\ 256 + 16 &= r^2\end{aligned}$$

$$\boxed{272 = r^2}$$

EQUATION
 $x^2 + y^2 = 272$

6) Center: (0, 0)

Point on Circle: (15, -9)

$$\begin{aligned}x^2 + y^2 &= r^2 \\ (15)^2 + (-9)^2 &= r^2 \\ 225 + 81 &= r^2\end{aligned}$$

$$\boxed{306 = r^2}$$

EQUATION
 $x^2 + y^2 = 306$

8) Center: (0, 0)

Point on Circle: (-17, 6)

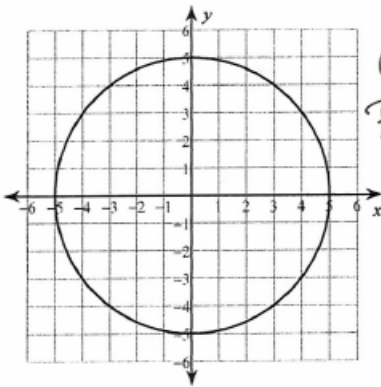
$$\begin{aligned}x^2 + y^2 &= r^2 \\ (-17)^2 + (6)^2 &= r^2 \\ 289 + 36 &= r^2\end{aligned}$$

$$\boxed{325 = r^2}$$

EQUATION
 $x^2 + y^2 = 325$

Use the graph provided to choose the standard form equation of each circle.

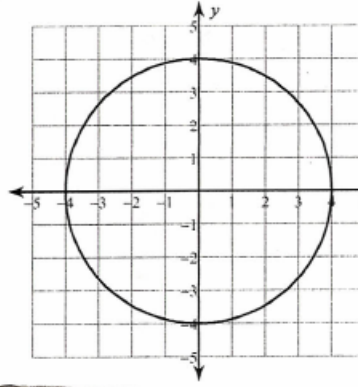
9)



Center (0,0)
Radius = 5
EQUATION
 $x^2 + y^2 = (5)^2$
 $x^2 + y^2 = 25$

- A) $(x+1)^2 + (y+2)^2 = 25$
- B) $(x-2)^2 + (y+1)^2 = 25$
- C) $(x+2)^2 + y^2 = 25$
- D) $x^2 + y^2 = 25$

10)



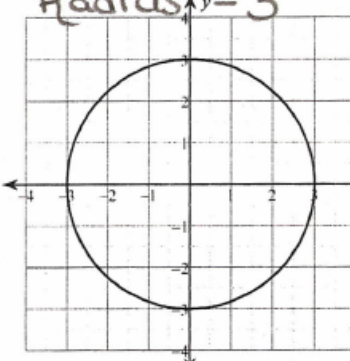
Center (0,0)
Radius = 4
EQUATION
 $x^2 + y^2 = (4)^2$
 $x^2 + y^2 = 16$

- A) $x^2 + y^2 = 16$
- B) $(x-2)^2 + y^2 = 16$
- C) $(x-2)^2 + (y+1)^2 = 16$
- D) $(x+2)^2 + (y+2)^2 = 16$

Use the information provided to write the equation of each circle in standard form. State the x-intercepts, y-intercepts, Domain, and Range.

11)

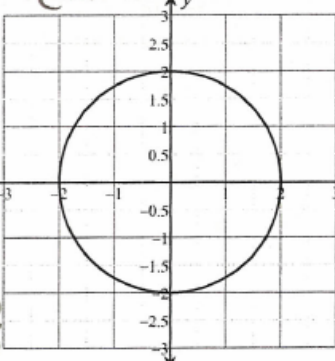
Center (0,0)
Radius = 3



EQUATION⁽¹²⁾
 $x^2 + y^2 = r^2$
 $x^2 + y^2 = (3)^2$
 $x^2 + y^2 = 9$

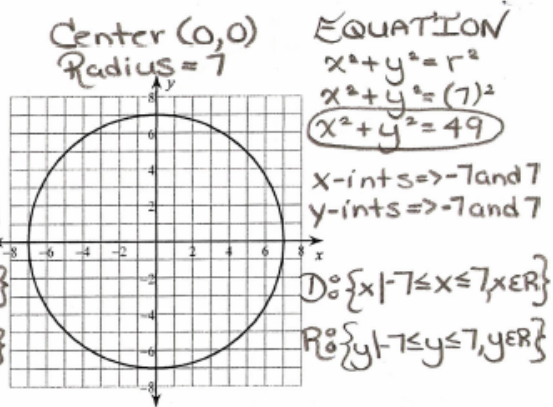
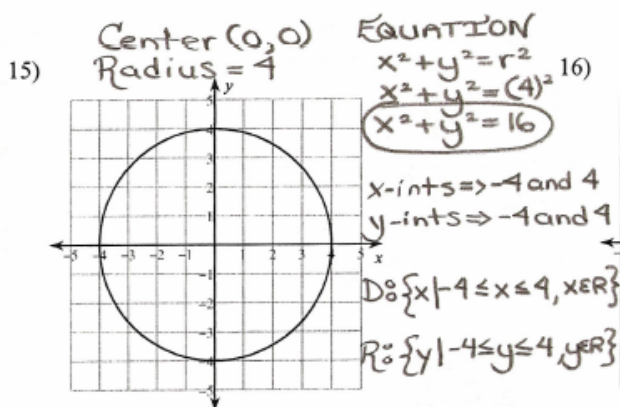
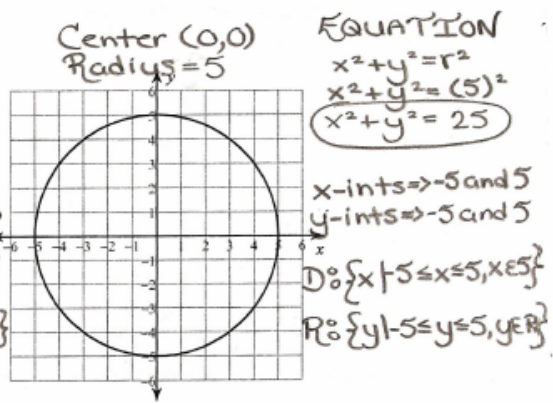
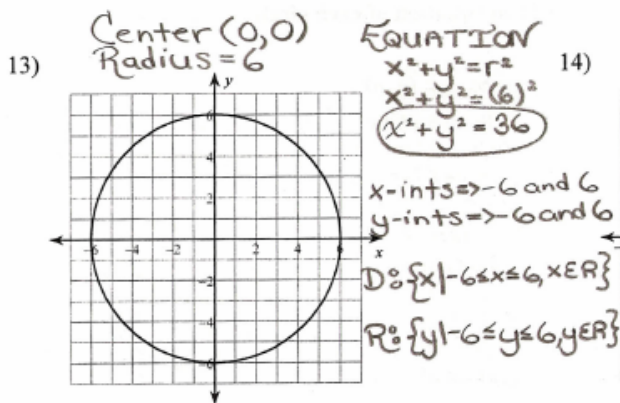
x-ints $\Rightarrow -3$ and 3
y-ints $\Rightarrow -3$ and 3
 $D: \{x \mid -3 \leq x \leq 3, x \in \mathbb{R}\}$
 $R: \{y \mid -3 \leq y \leq 3, y \in \mathbb{R}\}$

Center (0,0)
Radius = 2



EQUATION
 $x^2 + y^2 = r^2$
 $x^2 + y^2 = (2)^2$
 $x^2 + y^2 = 4$

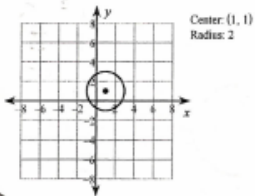
x-int $\Rightarrow -2$ and 2
y-int $\Rightarrow -2$ and 2
 $D: \{x \mid -2 \leq x \leq 2, x \in \mathbb{R}\}$
 $R: \{y \mid -2 \leq y \leq 2, y \in \mathbb{R}\}$



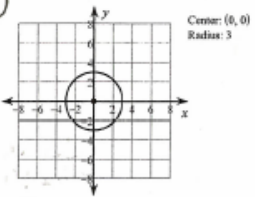
Identify the center and radius of each equation. Then choose the appropriate graph.

17) $x^2 + y^2 = 9$ Center $(0,0)$ $r^2=9$ $r=3$

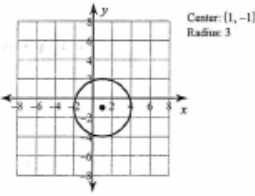
A)



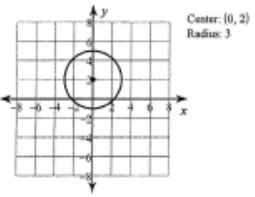
B)



C)

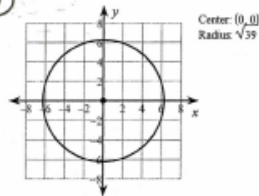


D)

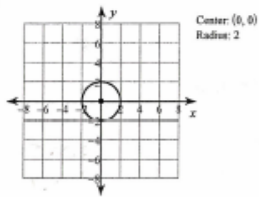


18) $x^2 + y^2 = 39$ Center $(0,0)$ $r^2=39$ $r=\sqrt{39}$

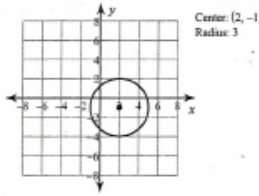
A)



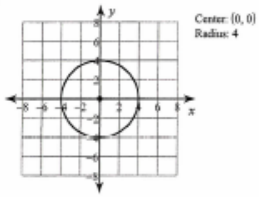
B)



C)

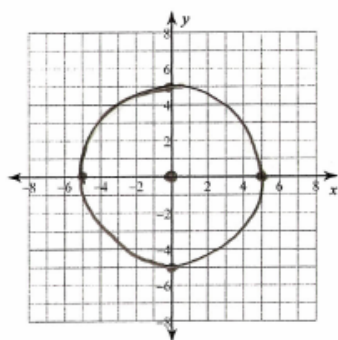


D)



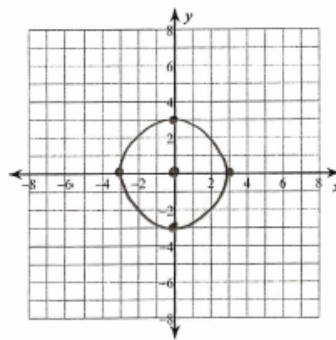
Identify the center and radius of each. Then sketch the appropriate graph.

19) $x^2 + y^2 = 25$



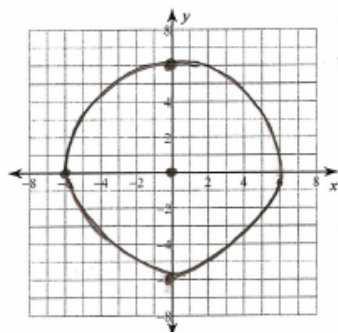
Center (0,0)
 $r^2 = 25$
 $r = 5$

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



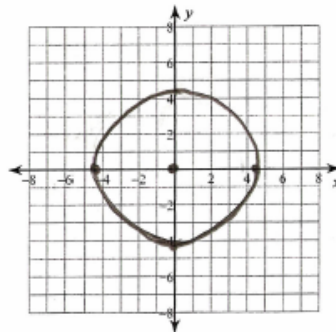
Center (0,0)
 $r^2 = 9$
 $r = 3$

21) $x^2 + y^2 = 36$



Center (0,0)
 $r^2 = 36$
 $r = 6$

22) $x^2 + y^2 = 19$



Center (0,0)
 $r^2 = 19$
 $r = \sqrt{19}$
 Approx. 4.4