

Circles Test Review

Name _____ ID: 1

Date _____ Period _____

Use the information provided to write the equation of each circle in STANDARD FORM

1) Center: $(0, 0)$

Radius: $7\sqrt{7}$

$$x^2 + y^2 = 343$$

2) Center: $(-7, 4)$

Radius: 6

$$(x + 7)^2 + (y - 4)^2 = 36$$

3) Center: $(6, -11)$

Area: 9π

$$(x - 6)^2 + (y + 11)^2 = 9$$

4) Center: $(-8, -2)$

Area: 25π

$$(x + 8)^2 + (y + 2)^2 = 25$$

5) Center: $(14, 8)$

Circumference: 4π

$$(x - 14)^2 + (y - 8)^2 = 4$$

6) Center: $\left(\sqrt{182}, \frac{31}{2}\right)$

Circumference: 6π

$$\left(x - \sqrt{182}\right)^2 + \left(y - \frac{31}{2}\right)^2 = 9$$

- 7) Center: (3, 10)
Point on Circle: (2, 3)

$$(x - 3)^2 + (y - 10)^2 = 50$$



- 8) Center: (-6, -15)
Point on Circle: (-8, -14)

$$(x + 6)^2 + (y + 15)^2 = 5$$

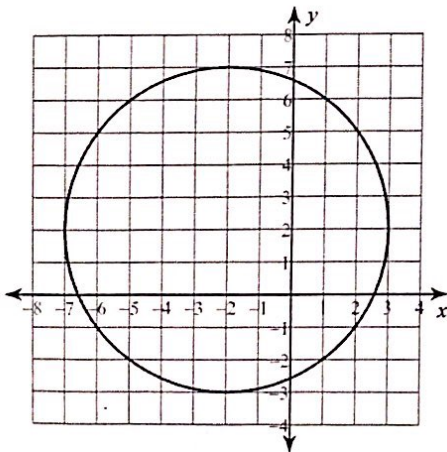
- 9) Ends of a diameter: (13, 10) and (1, -10)

$$(x - 7)^2 + y^2 = 136$$

- 10) Ends of a diameter: (-6, -5) and (-14, -3)

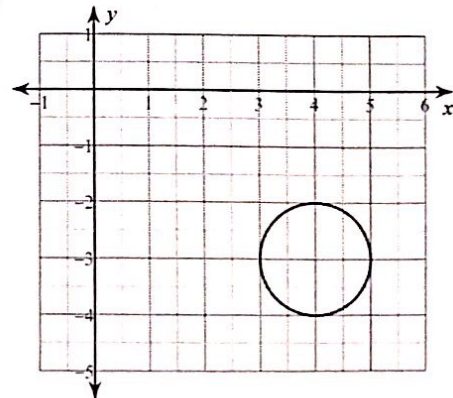
$$(x + 10)^2 + (y + 4)^2 = 17$$

11)



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

12)



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

Use the information provided to write the equation of each circle in GENERAL FORM

- 13) Center: $(-2, 9)$
Radius: 7

$$x^2 + y^2 + 4x - 18y + 36 = 0$$

- 14) Center: $(-10, 15)$
Radius: $\sqrt{11}$

$$x^2 + y^2 + 20x - 30y + 314 = 0$$

Use the information provided to write the equation of each circle.

- 15) Ends of a diameter: $(13, -9)$ and $(-17, 1)$

- A) $(x + 3)^2 + (y - 3)^2 = 250$
B) $(x + 2)^2 + (y + 4)^2 = 62500$
*C) $(x + 2)^2 + (y + 4)^2 = 250$
D) $(x - 4)^2 + (y - 2)^2 = 250$

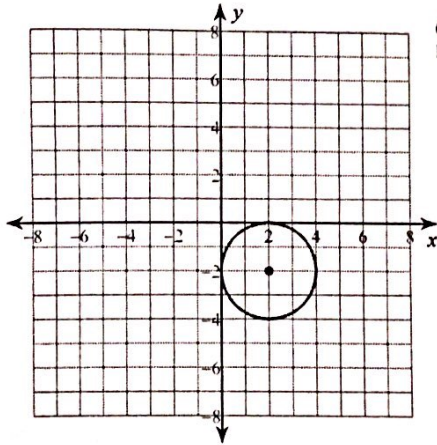
- 16) Center: $(11, -13)$

Point on Circle: $(9, -15)$

- A) $(x - 13)^2 + (y - 10)^2 = 8$
B) $(x - 13)^2 + (y - 11)^2 = 8$
*C) $(x - 11)^2 + (y + 13)^2 = 8$
D) $(x + 13)^2 + (y + 11)^2 = 8$

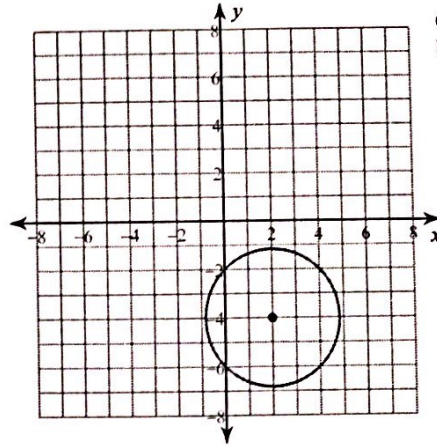
Identify the center and radius of each. _____ with the graph.

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



Center: (2, -2)
Radius: 2

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



Center: (2, -4)
Radius: $2\sqrt{2}$

Use the information provided to write the standard form equation of each circle. Tell the center and the radius.

19) $x^2 + y^2 + 2x - 18y + 66 = 0$

$(x + 1)^2 + (y - 9)^2 = 16$

C: (-1, 9)

r = 4

20) $x^2 - 8x - 6y = -y^2 + 11$

$(x - 4)^2 + (y - 3)^2 = 36$

C: (4, 3)

r = 6

21) $2x^2 + 2y^2 - 20y = 36$

$(x-0)^2 + (y-5)^2 = 43$

$x^2 + (y-5)^2 = 43$

C: (0, 5)

$r = \sqrt{43}$



22) $3x^2 + 3y^2 + 1092 = 78x + 84y$

$(x-13)^2 + (y-14)^2 = 1$

C: (13, 14)

$r = 1$

Prove whether the given point lies on, inside, or outside of the circle.

23) Center: origin, containing point (-5, 0)
Pt (2, 5)

$29 > 25$

(2, 5) lies outside ⓐ

24) Center: origin, containing point (0, 8)
Pt (1, $\sqrt{7}$)

$8 < 64$

(1, $\sqrt{7}$) lies inside ⓐ

25) The point (3,1) lies on a circle whose equation is $(x-8)^2 + (y-1)^2 = r^2$. Which of the following must be the radius of the circle?

- A) $\sqrt{5}$ B) 10 C) 25 *D) 5

26) The point (-12,-6) lies on a circle whose equation is $(x+5)^2 + (y+3)^2 = r^2$. Which of the following must be the radius of the circle?

- A) $\sqrt{26}$ B) 26
*C) $\sqrt{58}$ D) 58

27) Given the following equation of a circle $(x+2)^2 + (y+2)^2 = 9$ determine if the following points are in, on or outside the circle. Show all of your work and explain each answer.

(-2,-2) (2,1) (-3,-4) (-2,1)
inside outside inside on

Identify the center and radius of



28) $x^2 + y^2 - 20x - 16y + 97 = 0$

- A) Center: $(-10, -8)$
Radius: $\sqrt{67}$
- B) Center: $(-10, 8)$
Radius: 2
- *C) Center: $(10, 8)$
Radius: $\sqrt{67}$
- D) Center: $(6, -12)$
Radius: $\sqrt{67}$

29) $x^2 + y^2 - 32x + 6y + 261 = 0$

- A) Center: $(3, -16)$
Radius: 4
- B) Center: $(-16, 3)$
Radius: 4
- *C) Center: $(16, -3)$
Radius: 2
- D) Center: $(3, 16)$
Radius: 2

30) $x^2 + y^2 - 28x + 32y + 448 = 0$

- *A) Center: $(14, -16)$
Radius: 2
- B) Center: $(-13, 14)$
Radius: 2
- C) Center: $(-14, -16)$
Radius: 4
- D) Center: $(-14, 16)$
Radius: 2

31) $x^2 + y^2 - 14x + 14y + 55 = 0$

- A) Center: $(-5, 6)$
Radius: $\sqrt{43}$
- B) Center: $(-7, -7)$
Radius: 43
- *C) Center: $(7, -7)$
Radius: $\sqrt{43}$
- D) Center: $(-7, -7)$
Radius: $\sqrt{43}$

32) $(x + 9)^2 + \left(y - \frac{13}{2}\right)^2 = 100$

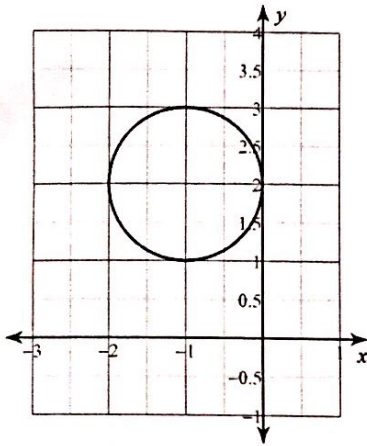
- A) Center: $\left(-9, \frac{13}{2}\right)$
Radius: 100
- *B) Center: $\left(-9, \frac{13}{2}\right)$
Radius: 10
- C) Center: $\left(-9, -\frac{13}{2}\right)$
Radius: 100
- D) Center: $\left(-\frac{13}{2}, 9\right)$
Radius: 10

33) $(x + 16)^2 + (y - 8)^2 = 4$

- A) Center: $(10, 18)$
Radius: 2
- B) Center: $(-7, -16)$
Radius: 2
- C) Center: $(17, 10)$
Radius: 2
- *D) Center: $(-16, 8)$
Radius: 2

Use the information provided to write the standard form equation of each circle.

34)



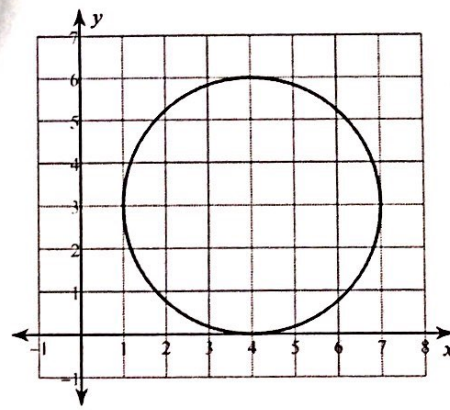
- A) $x^2 + y^2 + 2x + 4y = 0$
- B) $3x^2 + y^2 - 2x - 2y = 0$
- *C) $x^2 + y^2 + 2x - 4y + 4 = 0$
- D) $x^2 + y^2 + 2x + 4y + 3 = 0$

36) $(x + 3)^2 + (y + 10)^2 = 36$

$$x^2 + y^2 + 6x + 20y + 73 = 0$$

37) $(x + 5)^2 + y^2 = 144$

$$x^2 + y^2 + 10x - 119 = 0$$



- A) $4x^2 - y^2 - 8x - 6y - 14 = 0$
- B) $x^2 + y^2 - 8x - 6y - 56 = 0$
- C) $x^2 + 2y^2 - 8x - 6y + 16 = 0$
- *D) $x^2 + y^2 - 8x - 6y + 16 = 0$