

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

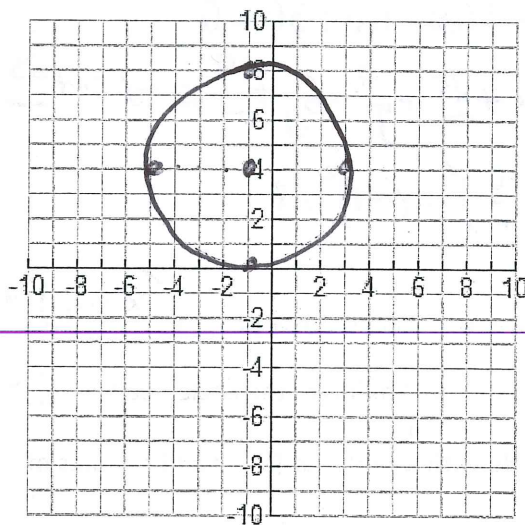
Midpoint:  $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$  (not given on the quiz)

1. Given the circle:  $(x + 1)^2 + (y - 4)^2 = 16$

a. Identify the center:  $(-1, 4)$

b. Identify the radius: 4

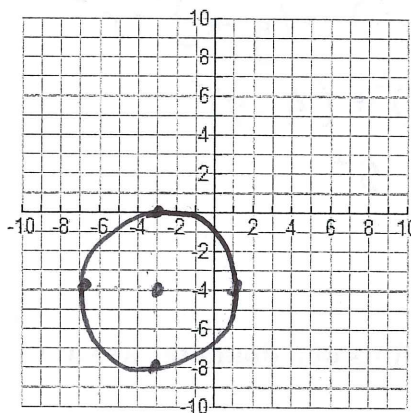
c. Graph the circle.



2. Graph circle that is centered at  $(-3, -4)$  and tangent to the x-axis

Write the equation of the circle in standard form:  $(x + 3)^2 + (y + 4)^2 = 16$

$r = 4$



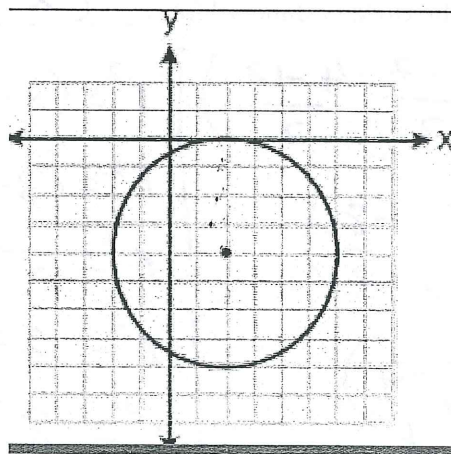
3. Given the following graph of the circle:

Identify the center:  $(2, -4)$

Identify the radius: 4

Write the equation in standard form:

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



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

Midpoint:  $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

4. Given the equation below:

$$x^2 + y^2 + 10x - 6y + 30 = 0$$

$$x^2 + 10x + 25 + y^2 - 6y + 9 = -30 + 25 + 9$$

$$\left(\frac{10}{2}\right)^2 = 5^2 \quad \left(\frac{-6}{2}\right)^2 = (-3)^2 = 9$$

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

A. Write this equation in standard form:  $(x+5)^2 + (y-3)^2 = 4$

B. Identify the center and radius of the circle. Center:  $(-5, 3)$  Radius: 2

5. Given the circle with a center at  $(3, -2)$  and a radius of  $\sqrt{23}$ .

Write the equation of the circle in standard form:  $(x-3)^2 + (y+2)^2 = 23$

6. The circle passes through the point  $(1, 4)$  and has its center at  $(2, 9)$ .

Write the equation of the circle in standard form:  $(x-2)^2 + (y-9)^2 = 26$

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

$$r^2 = (1-2)^2 + (4-9)^2$$

$$r^2 = 1^2 + 5^2$$

$$r^2 = 26$$

7. The endpoints of a diameter are at  $(3, 4)$  and at  $(-7, -12)$ .

Write the equation of the circle in standard form:  $(x+2)^2 + (y+4)^2 = 89$

Midpt:  $\left(\frac{3-7}{2}, \frac{4-12}{2}\right)$   $r^2 = (x-h)^2 + (y-k)^2$

$$\left(\frac{-4}{2}, \frac{-8}{2}\right)$$

$$r^2 = (3+2)^2 + (4+4)^2$$

$$r^2 = 5^2 + 8^2$$

$$r^2 = 25 + 64$$

$$r^2 = 89$$

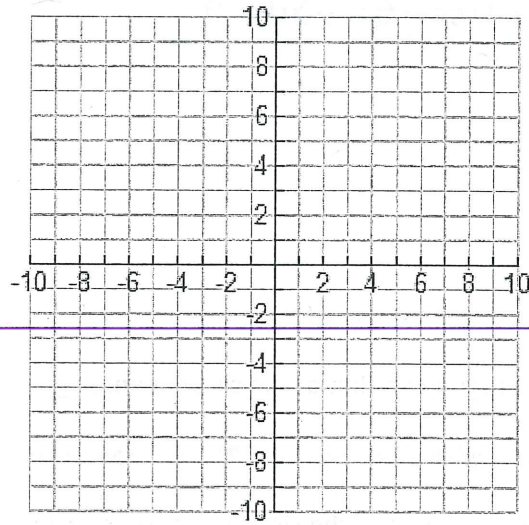
center  $(-2, -4)$   
h k

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

Midpoint:  $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$  (not given on the quiz)

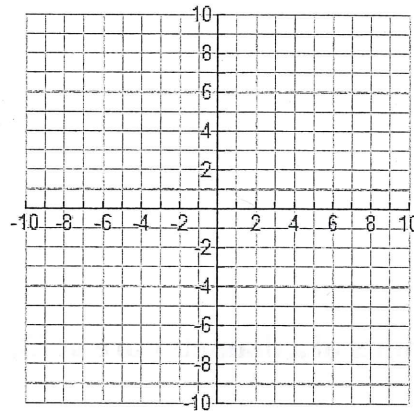
1. Given the circle:  $(x + 1)^2 + (y - 4)^2 = 16$

- a. Identify the center: \_\_\_\_\_
- b. Identify the radius: \_\_\_\_\_
- c. Graph the circle.



2. Graph circle that is centered at  $(-3, -4)$  and tangent to the x-axis

Write the equation of the circle in standard form: \_\_\_\_\_

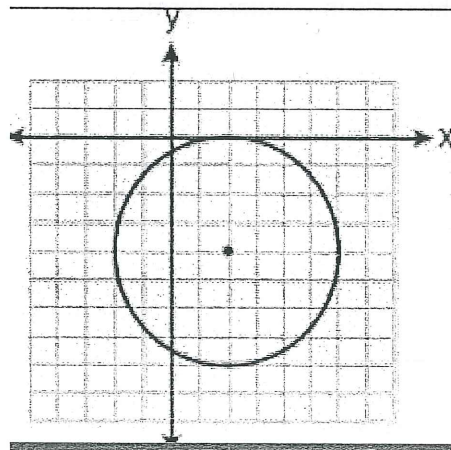


3. Given the following graph of the circle:

Identify the center: \_\_\_\_\_

Identify the radius: \_\_\_\_\_

Write the equation in standard form:



\_\_\_\_\_

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Midpoint:  $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

4. Given the equation below:

$$x^2 + y^2 + 10x - 6y + 30 = 0$$

A. Write this equation in standard form: \_\_\_\_\_

B. Identify the center and radius of the circle. Center: \_\_\_\_\_ Radius: \_\_\_\_\_.

5. Given the circle with a center at (3, -2) and a radius of  $\sqrt{23}$ .

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Write the equation of the circle in standard form: \_\_\_\_\_