

## Graphing Practice Quiz #2

Date \_\_\_\_\_

Write the slope-intercept form of the equation of the line described.

1) through:  $(-1, 2)$ , parallel to  $y = -7x + 3$

$$y = -7x + b$$

$$2 = -7(-1) + b$$

$$2 = 7 + b$$

$$-5 = b$$

$$y = -7x - 5$$

2) through:  $(-5, -2)$ , parallel to  $y = \frac{2}{5}x + 4$

$$y = \frac{2}{5}x + b$$

$$-2 = \frac{2}{5}(-5) + b$$

$$-2 = -2 + b$$

$$0 = b$$

$$y = \frac{2}{5}x$$

Write the standard form of the equation of the line described.

3) through:  $(-4, 2)$ , parallel to  $x + 2y = 3$

$$x + 2y = c$$

$$(-4) + 2(2) = c$$

$$-4 + 4 = c$$

$$0 = c$$

$$x + 2y = 0$$

4) through:  $(0, -4)$ , parallel to  $4x - 3y = -7$

$$4x - 3y = c$$

$$4(0) - 3(-4) = c$$

$$0 + 12 = c$$

$$12 = c$$

$$4x - 3y = 12$$

Write the point-slope form of the equation of the line described.

5) through:  $(1, 5)$ , parallel to  $y - 2 = 3(x + 1)$

$$y - y_1 = 3(x - x_1)$$

$$y - 5 = 3(x - 1)$$

6) through:  $(3, -2)$ , parallel to  $y + 8 = -\frac{4}{3}(x - 4)$

$$y - y_1 = -\frac{4}{3}(x - x_1)$$

$$y + 2 = -\frac{4}{3}(x - 3)$$

Write the slope-intercept form of the equation of the line described.

7) through:  $(3, -5)$ , perp. to  $y = \frac{3}{10}x - 3$

$$y = -\frac{10}{3}x + b$$

$$-5 = -\frac{10}{3}(3) + b$$

$$-5 = -10 + b$$

$$5 = b$$

$$y = -\frac{10}{3}x + 5$$

8) through:  $(2, -1)$ , perp. to  $y = x - 2$

$$y = -1x + b$$

$$-1 = -1(2) + b$$

$$-1 = -2 + b$$

$$1 = b$$

$$y = -1x + 1$$

Write the standard form of the equation of the line described.

9) through:  $(-4, -5)$ , perp. to  $x + 2y = 9$

$$2x - y = c$$

$$2(-4) - (-5) = c$$

$$-8 + 5 = c$$

$$-3 = c$$

$$2x - y = -3$$

10) through:  $(-1, 2)$ , perp. to  $3x - 5y = -5$

$$5x + 3y = c$$

$$5(-1) + 3(2) = c$$

$$-5 + 6 = c$$

$$1 = c$$

$$5x + 3y = 1$$

Write the point-slope form of the equation of the line described.

11) through:  $(-4, -3)$ , perp. to  $y + 7 = -2(x + 1)$

$$y - y_1 = \frac{1}{2}(x - x_1)$$

$$y + 3 = \frac{1}{2}(x + 4)$$

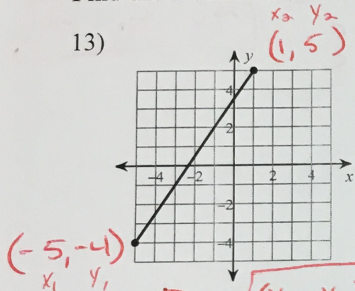
12) through:  $(-3, 2)$ , perp. to  $y - 5 = 3(x + 4)$

$$y - y_1 = -\frac{1}{3}(x - x_1)$$

$$y - 2 = -\frac{1}{3}(x + 3)$$

Find the distance between each pair of points.

13)



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

$$D = \sqrt{(-5 - 1)^2 + (-4 - 5)^2}$$

$$D = \sqrt{(-6)^2 + (-9)^2}$$

$$D = \sqrt{36 + 81}$$

$$D = \sqrt{117} = \sqrt{9 \cdot 13} = 3\sqrt{13}$$

14)  $(-7, 2), (1, -3)$

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

$$D = \sqrt{(-7 - 1)^2 + (2 - (-3))^2}$$

$$D = \sqrt{(-8)^2 + (5)^2}$$

$$D = \sqrt{64 + 25}$$

$$D = \sqrt{89}$$

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

15)  $(-10, -7), (8, -5)$

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

$$M = \left( \frac{-10 + 8}{2}, \frac{-7 + (-5)}{2} \right)$$

$$M = \left( \frac{-2}{2}, \frac{-12}{2} \right) = (-1, -6)$$

16)  $(-1, -10), (3, -4)$

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

$$M = \left( \frac{-1 + 3}{2}, \frac{-10 + (-4)}{2} \right)$$

$$M = \left( \frac{2}{2}, \frac{-14}{2} \right) = (1, -7)$$

Given the midpoint and one endpoint of a line segment, find the other endpoint.

17) Endpoint:  $(0, 5)$ , midpoint:  $(3, 8)$

$$x_m = \frac{x_1 + x_2}{2}$$

$$3 = \frac{0 + x_2}{2}$$

$$6 = 0 + x_2$$

$$6 = x_2$$

$$y_m = \frac{y_1 + y_2}{2}$$

$$8 = \frac{5 + y_2}{2}$$

$$16 = 5 + y_2$$

$$11 = y_2$$

$$(6, 11)$$

18) Endpoint:  $(3, 9)$ , midpoint:  $(1, 5)$

$$x_m = \frac{x_1 + x_2}{2}$$

$$1 = \frac{3 + x_2}{2}$$

$$2 = 3 + x_2$$

$$-1 = x_2$$

$$y_m = \frac{y_1 + y_2}{2}$$

$$5 = \frac{9 + y_2}{2}$$

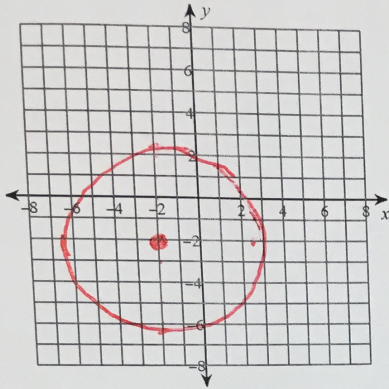
$$10 = 9 + y_2$$

$$1 = y_2$$

$$(-1, 1)$$

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

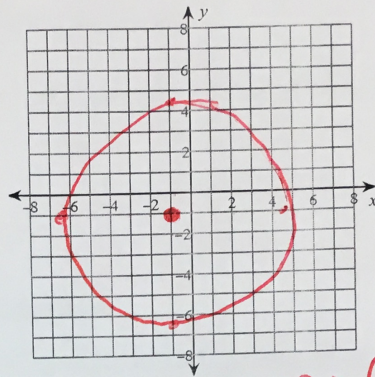
19)  $(x+2)^2 + (y+2)^2 = 18$



CENTER: (-2, -2)

RADIUS:  $\sqrt{18} = \sqrt{9 \cdot 2}$   
 $= 3\sqrt{2} \approx 4.2$

20)  $(x+1)^2 + (y+1)^2 = 27$



CENTER: (-1, -1)

RADIUS:  $\sqrt{27} = \sqrt{9 \cdot 3}$   
 $= 3\sqrt{3} \approx 5.2$

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

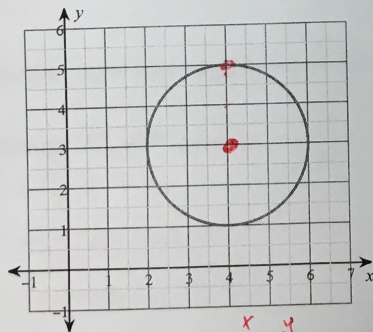
21) Center:  $(-15, 13)$   
 Radius: 2  $\rightarrow 2^2 = 4$

$(x+15)^2 + (y-13)^2 = 4$

22) Center:  $(-4, -16)$   
 Radius: 3  $\rightarrow 3^2 = 9$

$(x+4)^2 + (y+16)^2 = 9$

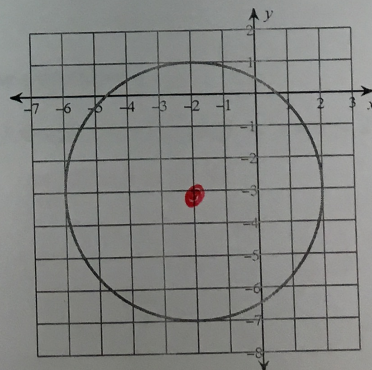
23)



CENTER:  $(4, 3)$   
 RADIUS: 2  $\rightarrow 2^2 = 4$

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

24)



CENTER:  $(-2, -3)$

RADIUS: 4  $\rightarrow 4^2 = 16$

$(x+2)^2 + (y+3)^2 = 16$