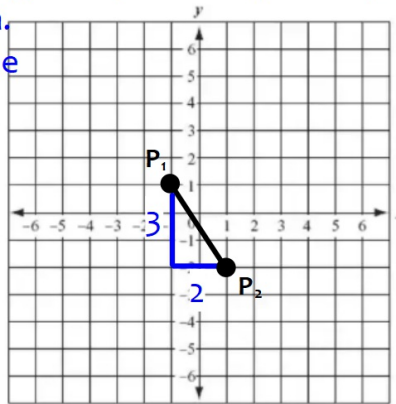


Unit 1 Review **Guided Practice** (Day 6)

1. Find the distance $d(P_1, P_2)$ between the given points P_1 and P_2 .
 For this problem, you can use the distance formula.
 But, because you have a graph, you can also use the pythagorean theorem.

$$\begin{aligned} 3^2 + 2^2 &= c^2 \\ 9 + 4 &= c^2 \\ 13 &= c^2 \\ d(P_1, P_2) &= \sqrt{13} \end{aligned}$$

(Simplify your answer. Write an exact answer, using radicals as needed.)



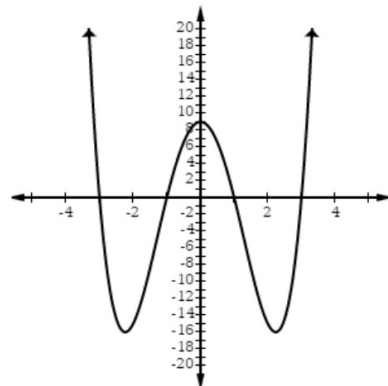
2. Find the midpoint of the line segment joining the points P_1 and P_2 .
 Use the midpoint formula.

$$P_1 = (-3, 2); P_2 = (7, -8) \quad \left(\frac{-3+7}{2}, \frac{2+(-8)}{2} \right) = \left(\frac{4}{2}, \frac{-6}{2} \right)$$

The midpoint of the line segment joining the points P_1 and P_2 is $(2, -3)$.
 (Simplify your answer. Write an ordered pair.)

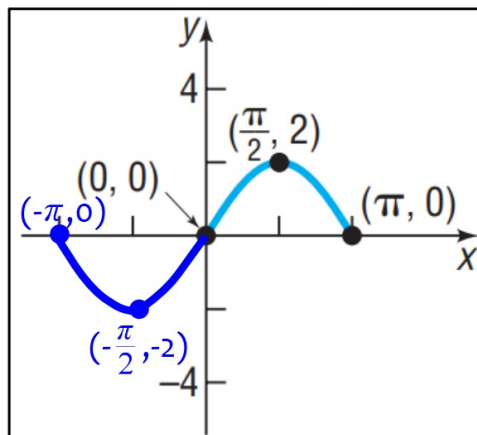
3. The graph of an equation is given.
 (a) Find the intercepts.
 (b) Indicate whether the graph is symmetric with respect to the x-axis, the y-axis, or the origin.

- (a) The intercept(s) of the graph are $(-3,0), (-1,0), (0,9), (1,0), (3,0)$.
 (Write an ordered pair. Use a comma to separate answers as needed. Write each answer only once.)



- (b) The graph is symmetric about the y-axis.

4. Draw a complete graph so that it has symmetry with respect to the origin.



5. The slope m and a point P on a line are given. Use the information to find three additional points on the line.

$$m = \frac{2}{5}; P = (-6, -5)$$

Slope-Intercept Form:

$$y = mx + b$$

$$-5 = \frac{2}{5}(-6) + b$$

$$-5 = -\frac{12}{5} + b$$

$$-\frac{13}{5} = b$$

- A. $(-4,0), (-2,5), (0,10)$
 B. $(-1, -3), (4, -1), (9,1)$
 C. $(0, -4), (5, -2), (10,0)$
 D. $(-3, -1), (-1,4), (1,9)$

So, our linear equation is $y = \frac{2}{5}x - \frac{13}{5}$.
You can use desmos or the graphing

6. Find an equation of the line L . L is perpendicular to $y = 2x$.

The equation is $y = -\frac{1}{2}x - \frac{15}{2}$.

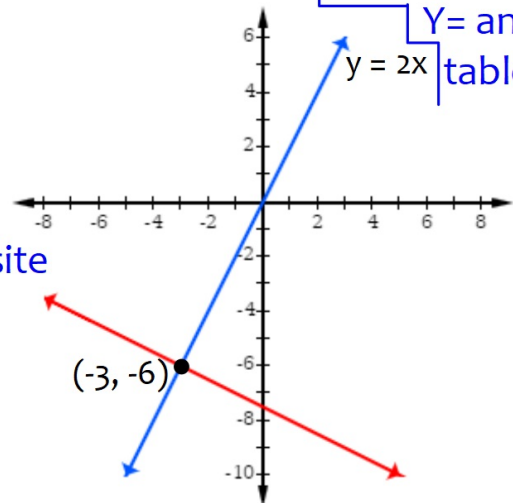
(Write an equation. Use integers or fractions for any numbers in the equation. Simplify your answer.)

Remember perpendicular lines have opposite reciprocal slopes. So,

$$-6 = -\frac{1}{2}(-3) + b$$

$$-6 = \frac{3}{2} + b$$

$$-\frac{15}{2} = b$$



calculator
Y= and
table.

7. Find an equation for the line with the given properties. Express your answer using either the general form or the slope-intercept form of the equation of a line. First, we use the slope formula.

$$m = \frac{1-4}{7-(-2)} = \frac{-3}{9} = -\frac{1}{3}$$

Containing the points $(-2, 4)$ and $(7, 1)$

The equation is $y = -\frac{1}{3}x + \frac{10}{3}$.

(Write an equation. Use integers or fractions for any numbers in the equation. Simplify your answer.)

Then, choose one of the two points to solve the equation.
 $4 = -\frac{1}{3}(-2) + b$
Solve for b .

8. Determine the equation of the graph to the right. The center is $(-3, 3)$ and the radius is 6 units in length.

The equation is

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

(Simplify your answer. Type your answer in standard form.)

