

Warm-up:

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

1. $m = \frac{1}{5}$ and $(-10, 7)$

$$y = \frac{1}{5}x + 9$$

$$y = mx + b$$

$$7 = \left(\frac{1}{5}\right)(-10) + b$$

$$7 = -2 + b$$

$$\begin{array}{r} +2 \\ +2 \\ \hline 9 = b \end{array}$$

2. $m = -3$ and $(-5, -2)$

$$y = -3x - 17$$

$$y = mx + b$$

$$-2 = (-3)(-5) + b$$

$$-2 = 15 + b$$

$$\begin{array}{r} -15 \\ -15 \\ \hline -17 = b \end{array}$$

Find the slope.

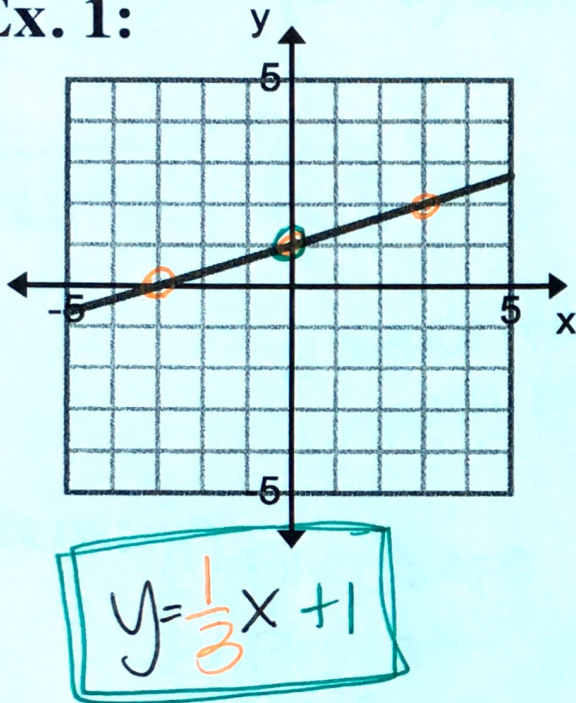
3. $(-3, 4)$ and $(5, -2)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 4}{5 - (-3)} = \frac{-6}{8} = \boxed{\frac{-3}{4}}$$

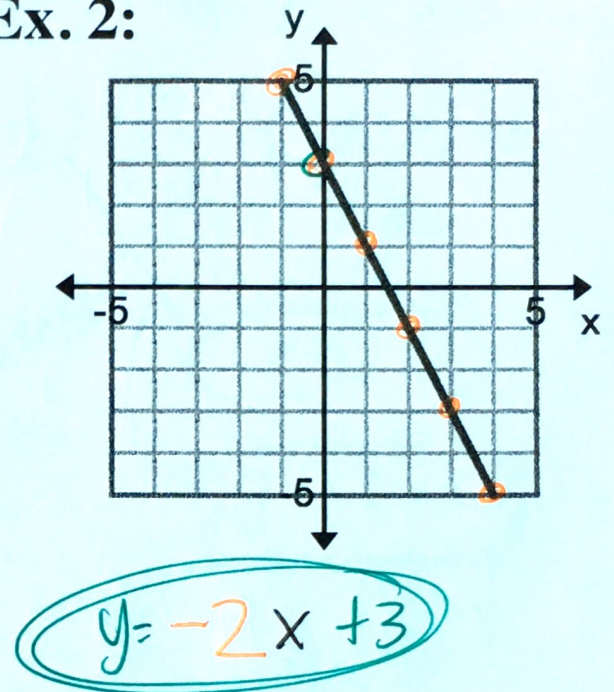
Review:

Write the equation for the line.

Ex. 1:

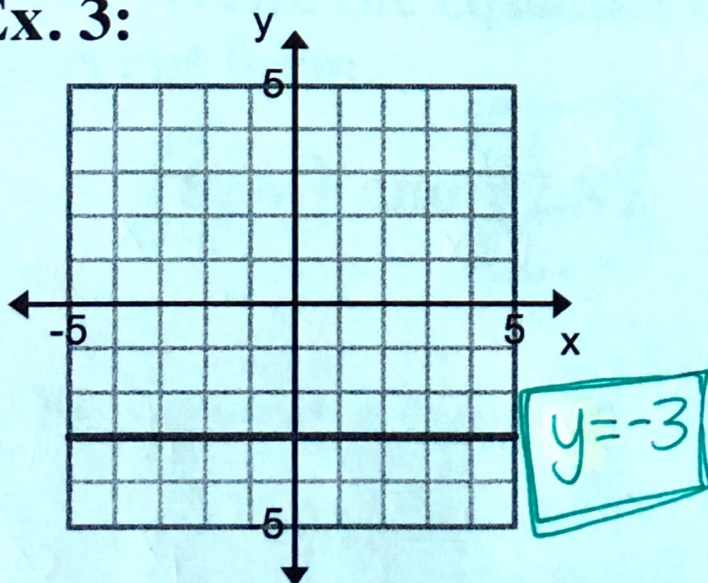


Ex. 2:

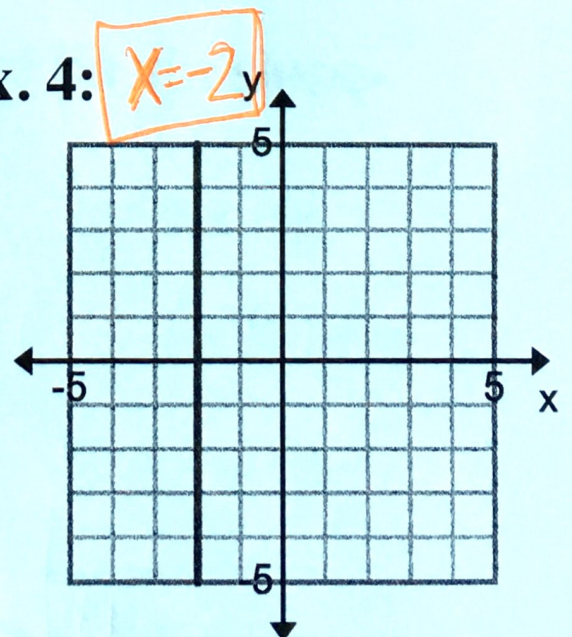


Write the equation for the line.

Ex. 3:



Ex. 4:



Ex. 5: Write the equation of the line in slope-intercept form given the two points.

$$\overset{x}{(2,} \overset{y}{-3)} \text{ and } \boxed{\overset{x}{(-3,} \overset{y}{7)}}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - (-3)}{-3 - 2} = \frac{10}{-5} = \boxed{-2 = m}$$

* Doesn't matter which point you use! *

$$y = mx + b$$

$$7 = (-2)(-3) + b$$

$$7 = 6 + b$$

$$-b \quad -b$$

$$\boxed{1 = b}$$

$$\boxed{y = -2x + 1}$$

- Steps:**
- ① FIND Slope first!
 - ② Plug into $y = mx + b$
 - ③ solve for b
 - ④ Write EQUATION!

Ex. 6: Write the equation of the line in slope-intercept form.

$$\overset{x}{(6,} \overset{y}{-4)} \text{ and } \boxed{\overset{x}{(2,} \overset{y}{8)}}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - (-4)}{2 - 6} = \frac{12}{-4} = \boxed{-3 = m}$$

$$y = mx + b$$

$$8 = (-3)(2) + b$$

$$8 = -6 + b$$

$$+b \quad +b$$

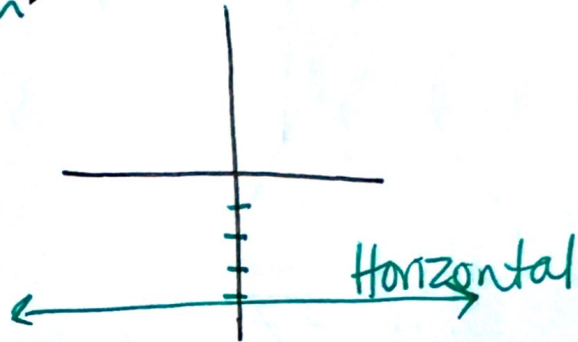
$$\boxed{14 = b}$$

$$\boxed{y = -3x + 14}$$

Ex. 7: Write the equation of the line in slope-intercept form.

$$(3, -4) \text{ and } (-9, -4)$$

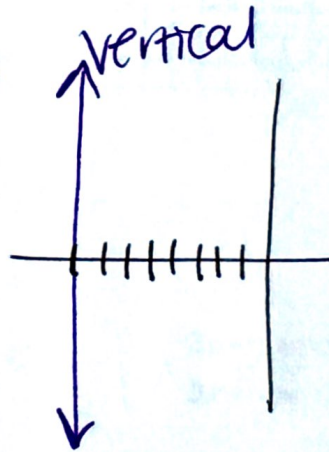
$$y = -4$$



Ex. 8: Write the equation of the line in slope-intercept form.

$$(-8, -5) \text{ and } (-8, -3)$$

$$x = -8$$



Horizontal Lines: $y = \underline{\quad}$

Vertical Lines: $x = \underline{\quad}$