

Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1). **efficient**

coefficient

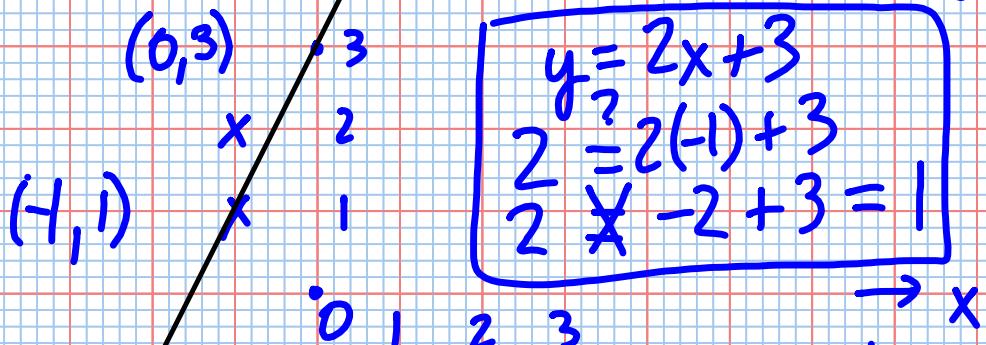
$$1. \quad y = 2x + 3$$

Is $(-1, 2)$ on the graph?

No → multiple of a var

slope m \uparrow
 b \uparrow y-intercept \uparrow y \uparrow x
 $(0, 3)$ \nearrow 2 is a coeff of x
 $(1, 5)$ $|$ 1 is the coeff of y

<u>X</u>	<u>y</u>
0	3
-3	0
-½	
1	5



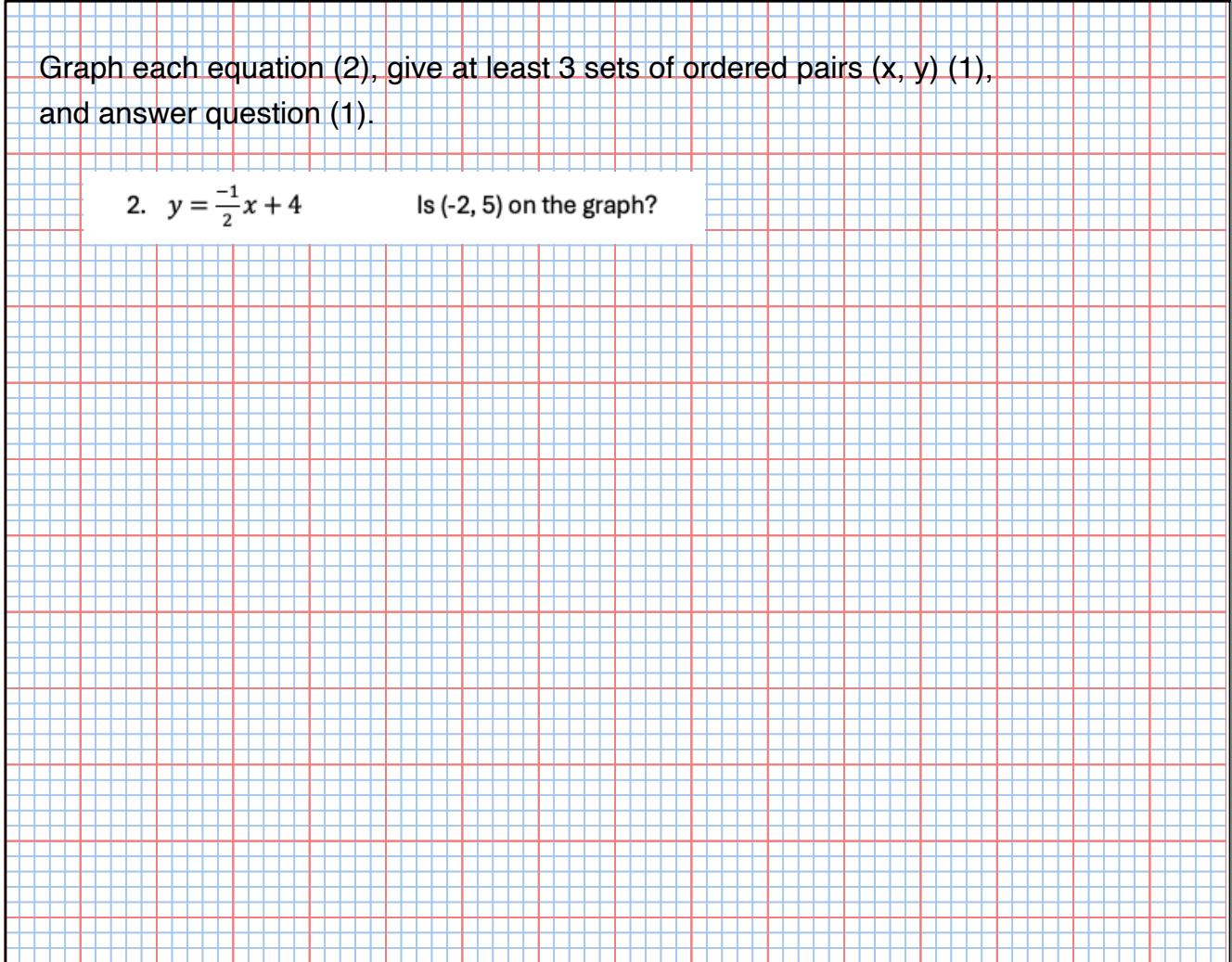
$$m = \frac{2}{1} \rightarrow \frac{-3}{-3} = 2x \rightarrow x = \frac{-3}{2}$$

$0 = 2x + 3$

Slope $\frac{\text{change in } y}{\text{Change in } x}$

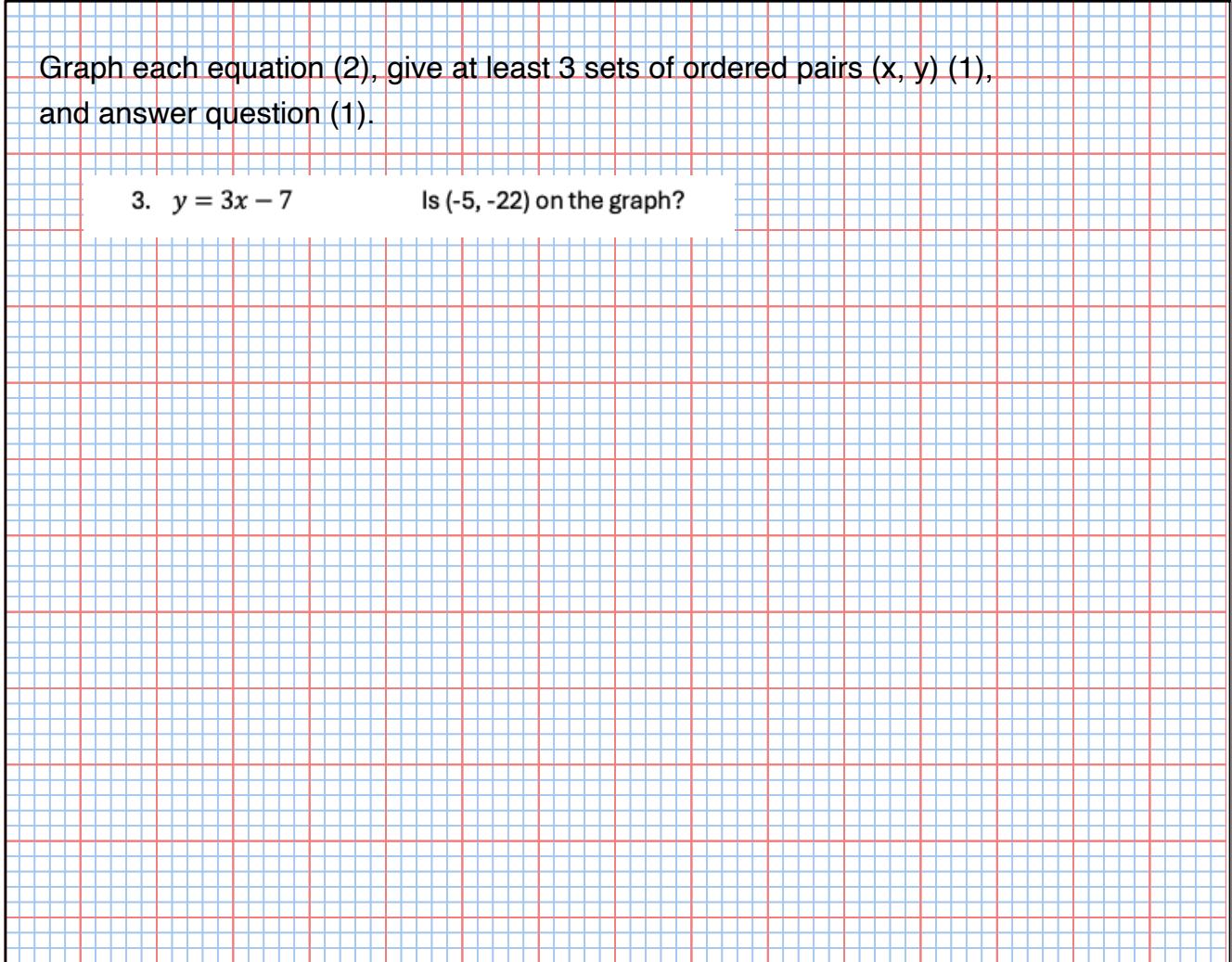
Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

2. $y = \frac{-1}{2}x + 4$ Is (-2, 5) on the graph?



Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

3. $y = 3x - 7$ Is (-5, -22) on the graph?



Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

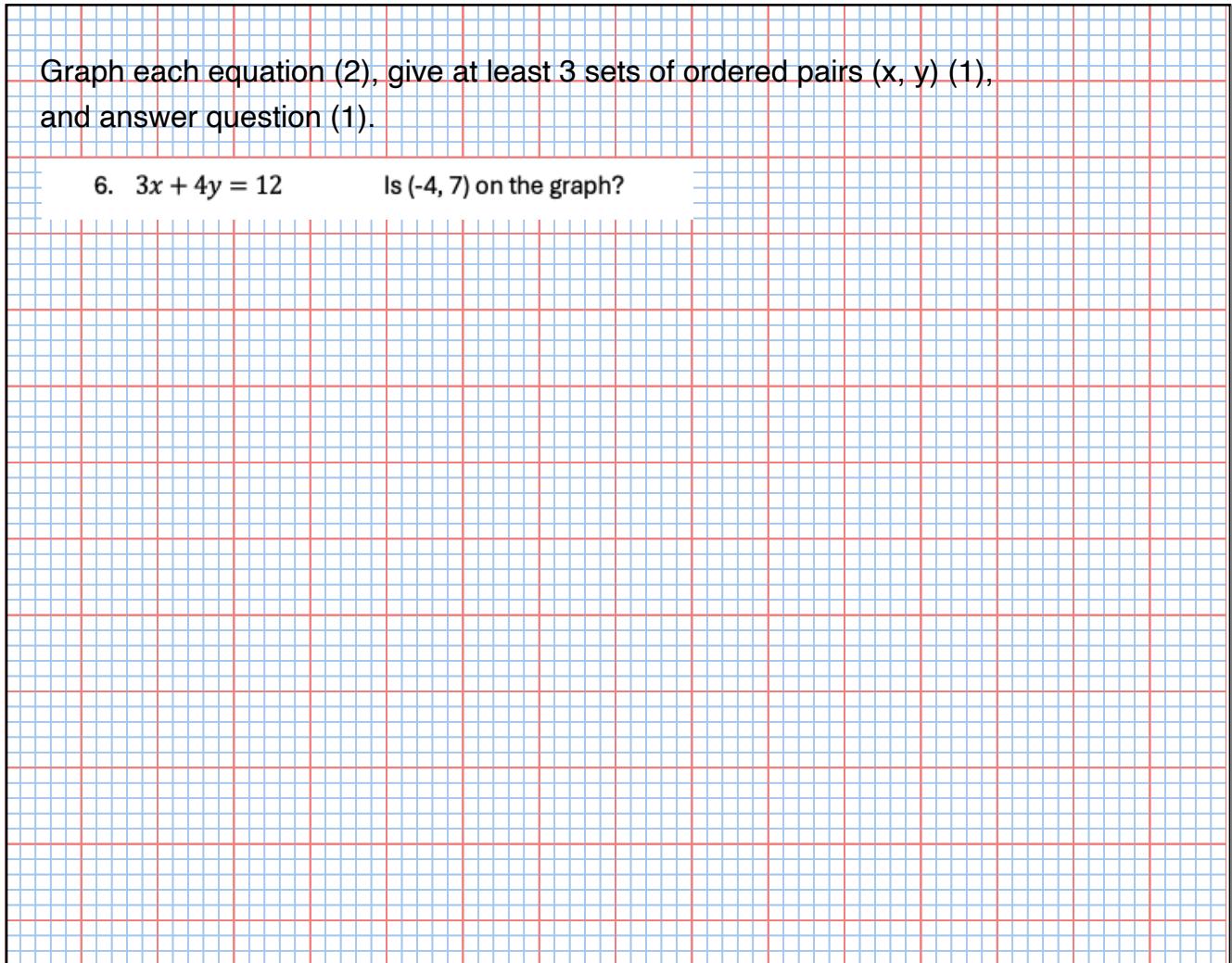
4. $y = -5x + 1$ What is the slope of the graph?

Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

5. $y = \frac{4}{3}x - 2$ Is (4, 3) on the graph?

Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

6. $3x + 4y = 12$ Is (-4, 7) on the graph?



Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

$$7. \quad 5x - 2y = 10$$

What is the slope of the graph?

<u>X</u>	<u>y</u>
0	-5
2	0
4	5

$$\begin{aligned} 5x - 2y &= 10 \\ -5x &\quad -5x \end{aligned}$$

$$\begin{aligned} 5(+) - 2y &= 10 \\ -20 - 2y &= 10 \\ -20 &\quad -20 \\ -2y &= -10 \\ y &= 5 \end{aligned}$$

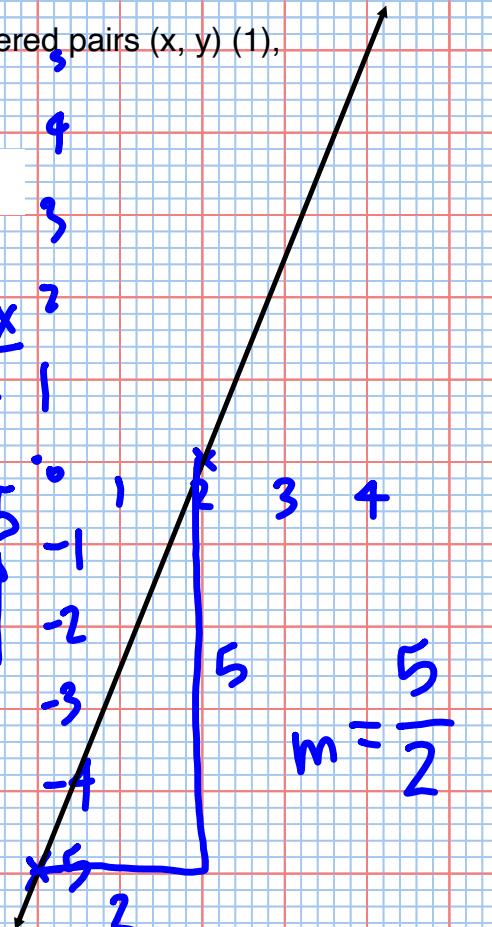
$$\begin{aligned} 5(0) - 2y &= 10 \\ -2y &= 10 \\ -2 &\quad -2 \\ y &= -5 \end{aligned}$$

$$\begin{aligned} 5x - 2(0) &= 10 \\ 5x &= 10 \\ 5 &\quad 5 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} -2y &= 10 - 5x \\ -2 &\quad -2 \\ y &= \frac{5}{2}x - 5 \end{aligned}$$

m
 $y\text{-int}$

$$m = \frac{5}{2}$$



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8. $-x + 3y = 15$ What is the y-intercept of the graph?

Graph each equation (2), give at least 3 sets of ordered pairs (x, y) (1), and answer question (1).

$$y = 0$$

9. $y - 2 = 3(x + 1)$

What is the x-intercept of the graph?

$$-\frac{5}{3}$$

x	y
0	5
$-\frac{5}{3}$	0
-1	2

$$\begin{aligned} y - 2 &= 3(x + 1) \\ +2 &\quad +2 \\ \hline y &= 3x + 5 \end{aligned}$$

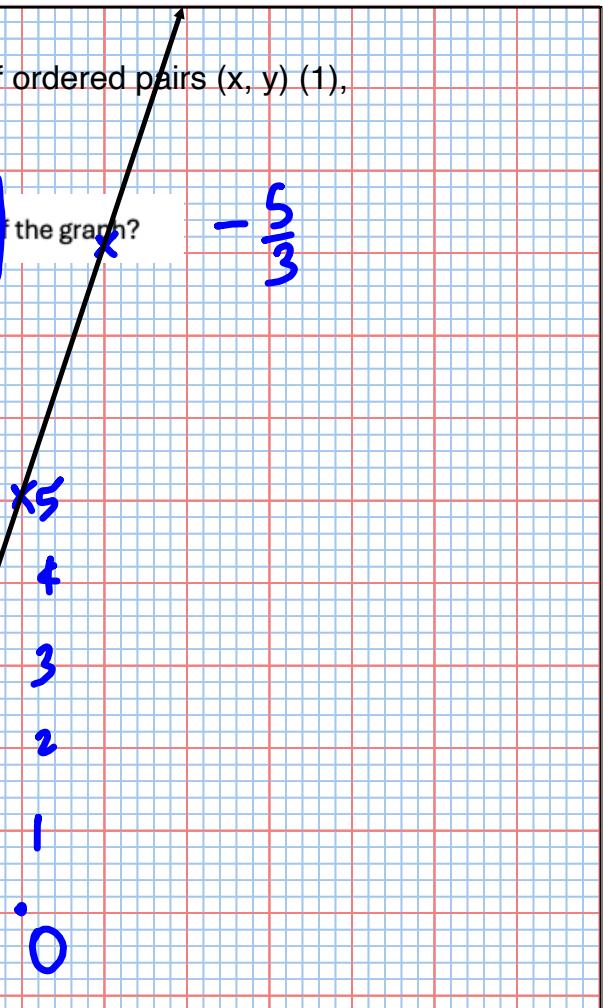
$$m = 3$$

$$y - 2 = 3(0 + 1)$$

$$\begin{aligned} y - 2 &= 3 \\ +2 &\quad +2 \\ \hline y &= 5 \end{aligned}$$

$$0 - 2 = 3(x + 1)$$

$$\begin{aligned} -2 &= 3x + 3 \\ -\frac{2}{3} &= \frac{3x}{3} \\ -\frac{2}{3} &= x \end{aligned}$$



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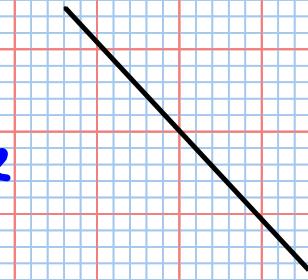
10. $y + 5 = -2(x - 4)$ Is (3, -3) on the graph?

Slope

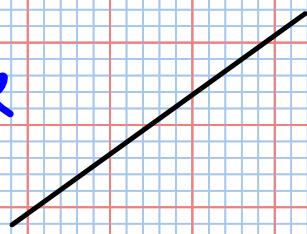
$$\frac{\text{Change in } y}{\text{Change in } x}$$

$\frac{1}{3} \leftarrow$ as this gets bigger, the slope gets steeper
 $\frac{1}{3} \leftarrow$ as this gets bigger, the slope gets shallower

Slope is negative



Slope is positive



Plot point. Mirror points (and lines).

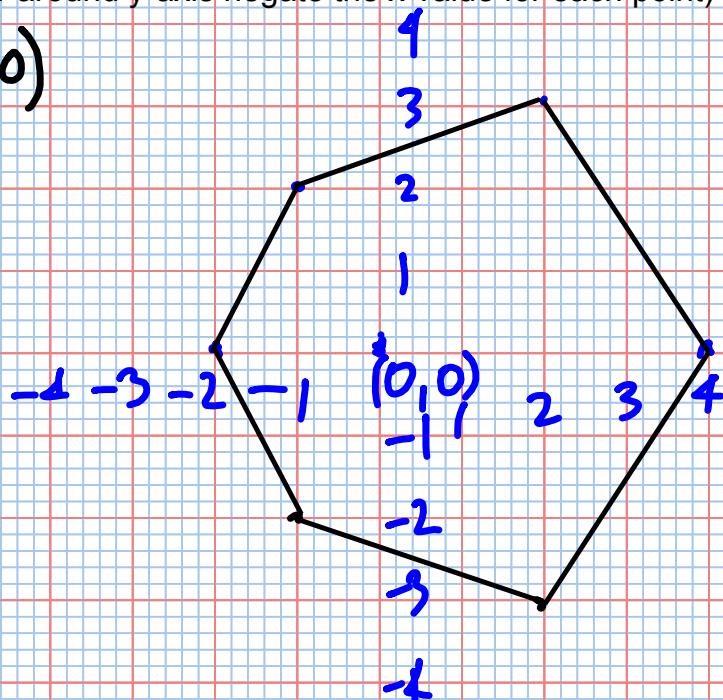
- Plot: $(-2, 0)$, $(-1, 2)$, $(2, 3)$, $(4, 0)$
- Mirror across x-axis
- (to mirror around x-axis negate the y-value for each point)
- (to mirror around y-axis negate the x-value for each point)

$(-2, 0)$
 $(-1, -2)$

(x, y)

$\uparrow y$

$\rightarrow x$



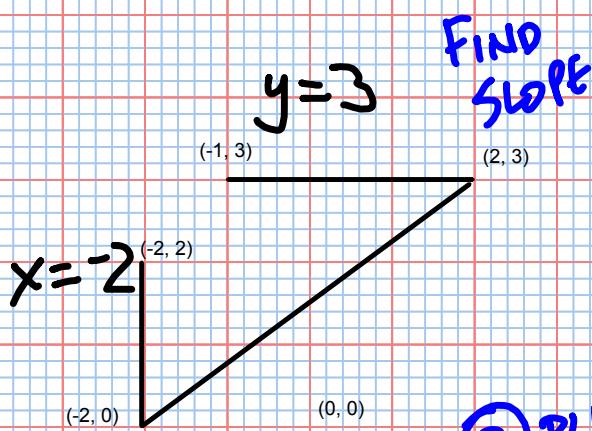
Plot point. Mirror points (and lines).

- Plot: $(-2, 0)$, $(-1, 2)$, $(2, 3)$, $(4, 0)$
- Find equations of lines



Plot point. Mirror points (and lines).

- Plot: (-2, 0), (-1, 2), (2, 3), (4, 0)
- Find equations of lines



①

$$m = \frac{\text{change in } y}{\text{change in } x}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - 0}{2 - (-2)} = \frac{3}{4}$$

② PLUG POINT INTO EQUATION

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

$$2 - 2 = 2 + 2$$

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

$$\frac{3}{2} - \frac{3}{2} = \frac{3}{2}$$

$$\frac{3}{2} - \frac{3}{2} = \frac{3}{2}$$

point slope

$$y - 0 = \frac{3}{4}(x - 2)$$

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

April 18, 2025

