Graphing

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

1. $y = 2x + 3$ Is (-1, 2) on the graph?

NOT ON GRAPH

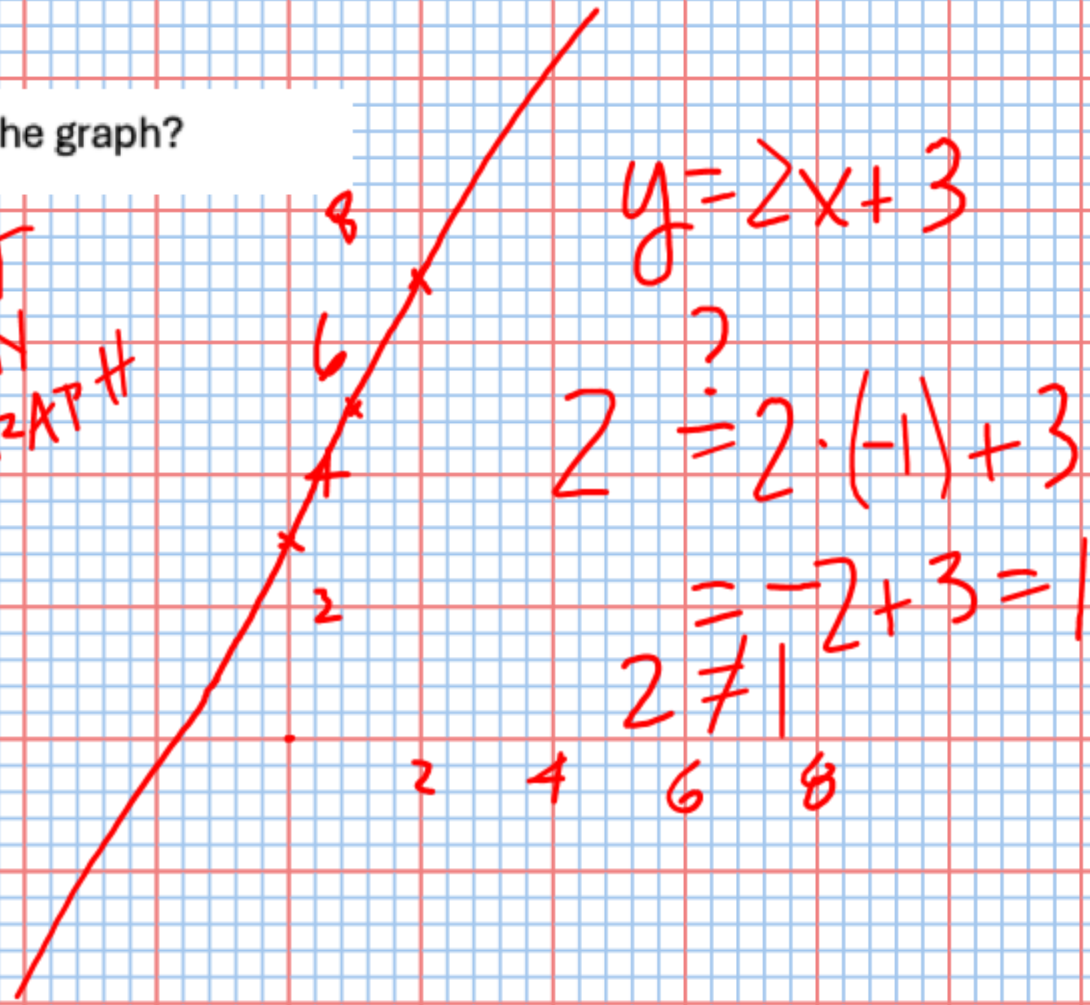
x	y
0	3
1	5
2	7

(0, 3)

(1, 5)

(2, 7)

$m = \frac{2}{1}$



$y = 2x + 3$

$2 \stackrel{?}{=} 2 \cdot (-1) + 3$

$= -2 + 3 = 1$

$2 \neq 1$

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?

No

$3x + 4y = 12$

$3(-4) + (4)(7) \stackrel{?}{=} 12$

$-12 + 28 \stackrel{?}{=} 12$

$16 \neq 12$

x	y
0	3
4	0

$3(0) + 4y = 12$

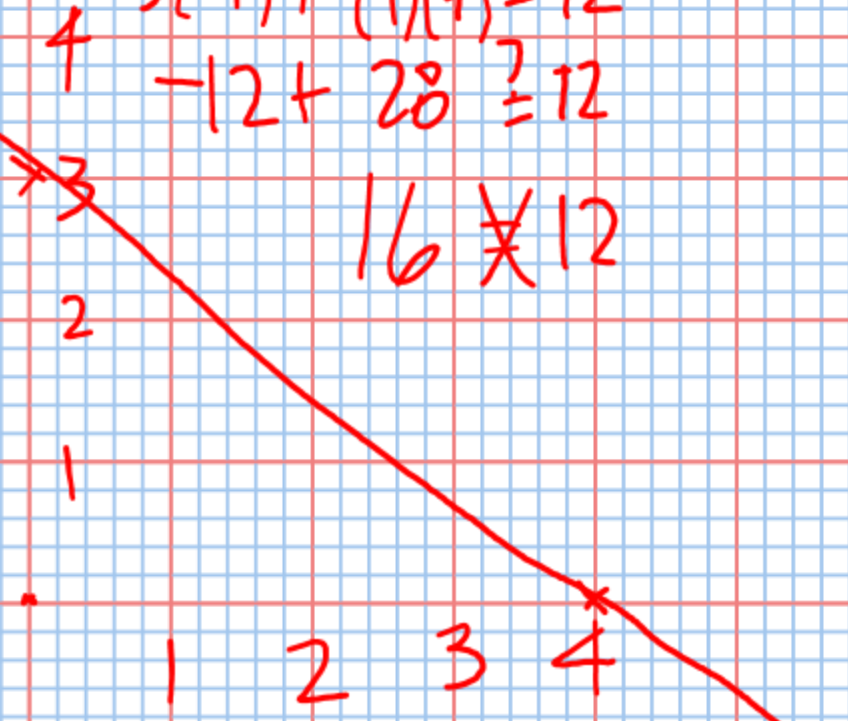
$\frac{4y}{4} = \frac{12}{4}$

$y = 3$

$3x + 4(0) = 12$

$\frac{3x}{3} = \frac{12}{3}$

$x = 4$



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

7. $5x - 2y = 10$ What is the slope of the graph?

$5x - 2y = 10$

$-5x \qquad -5x$

$-2y = 10 - 5x$

$\frac{-2y}{-2} = \frac{10 - 5x}{-2}$

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

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

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

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

$-X + 3y = 15$

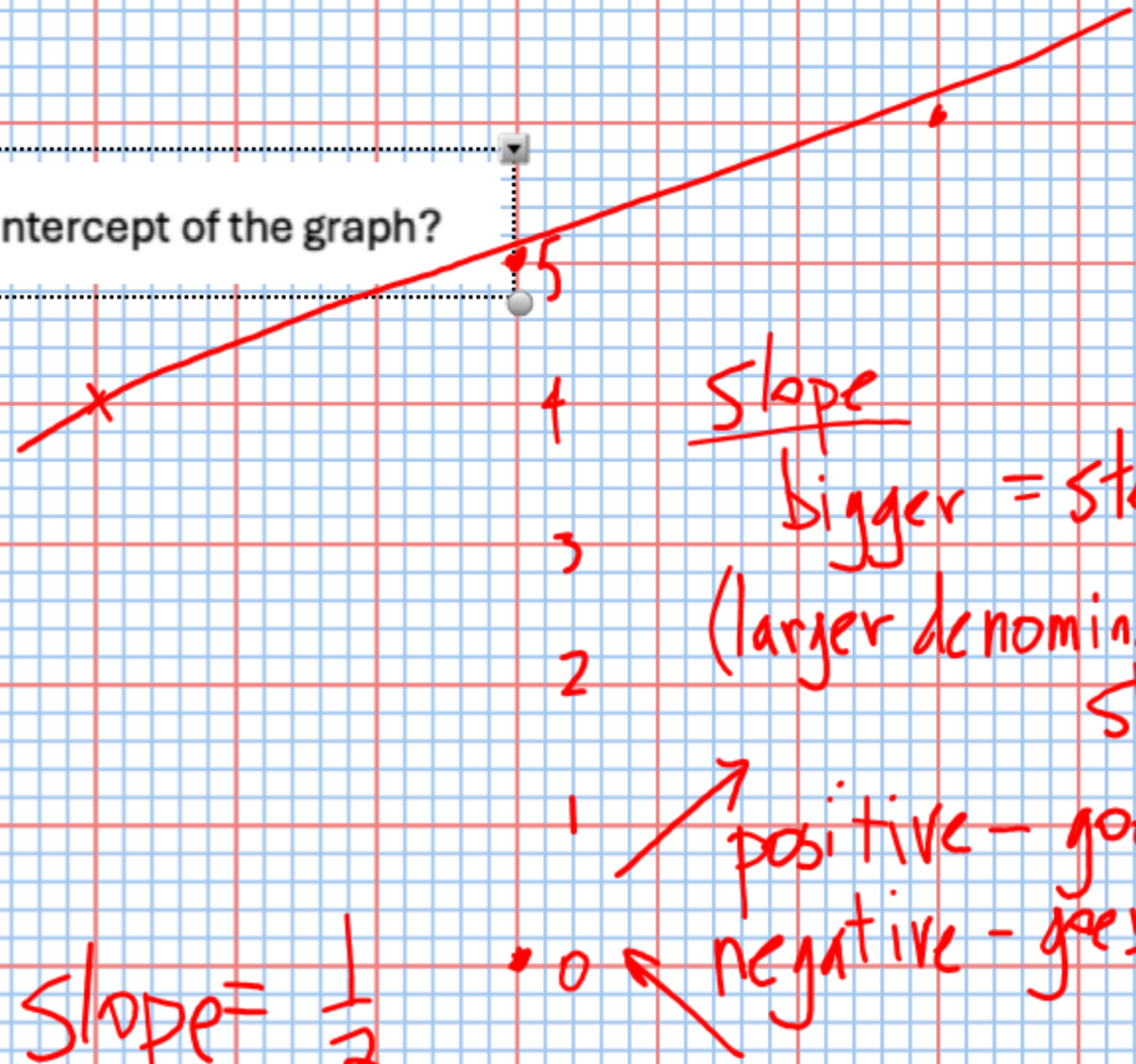
$+X \quad +X$

$\frac{3y}{3} = \frac{15 + X}{3}$

$y = 5 + \frac{X}{3}$

$y = \frac{1}{3}X + 5$

slope $= \frac{1}{3}$



slope

bigger = steeper

(larger denominator = shallower)

positive - goes up to right

negative - goes up to left

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

9. $y - 2 = 3(x + 1)$ What is the x-intercept of the graph?

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

$y = 0$

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

$y - 2 = 3$

$+2 \quad +2$

$y = 5$

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

$-2 = 3x + 3$

$-3 \quad -3$

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

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

$(-2, -1)$

$y - 2 = 3x + 3$

$+2 \quad +2$

$y = 3x + 5$

$m = \frac{3}{1}$

find x-intercept
$y = 0$ solve for x

find y-intercept
$x = 0$ solve for y

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

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

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(2,3) mirror around X-axis → negate the y for each point

(-1,2)

(-2,4)

(0,0)

(4,0)

X

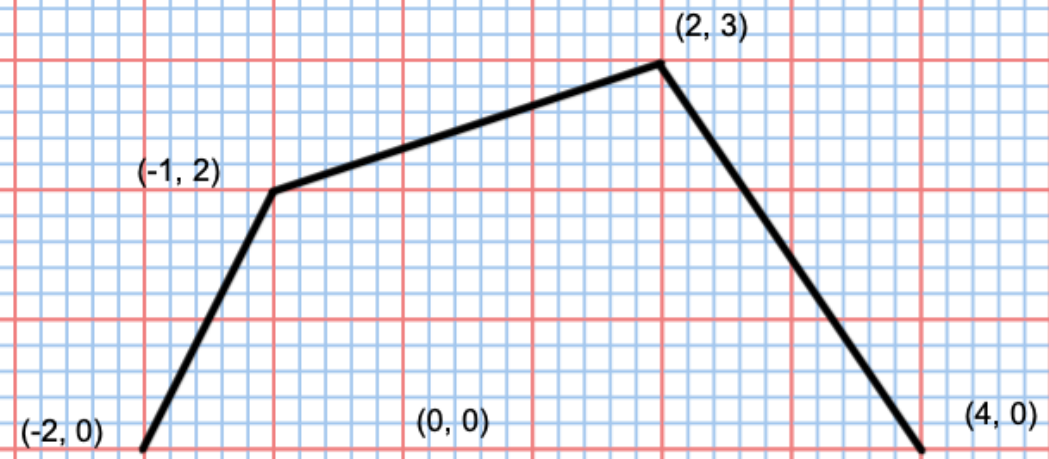
(to mirror around y-axis, negate X value)

(-1,-2)

(2,-3)

Plot point. Mirror points (and lines).

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



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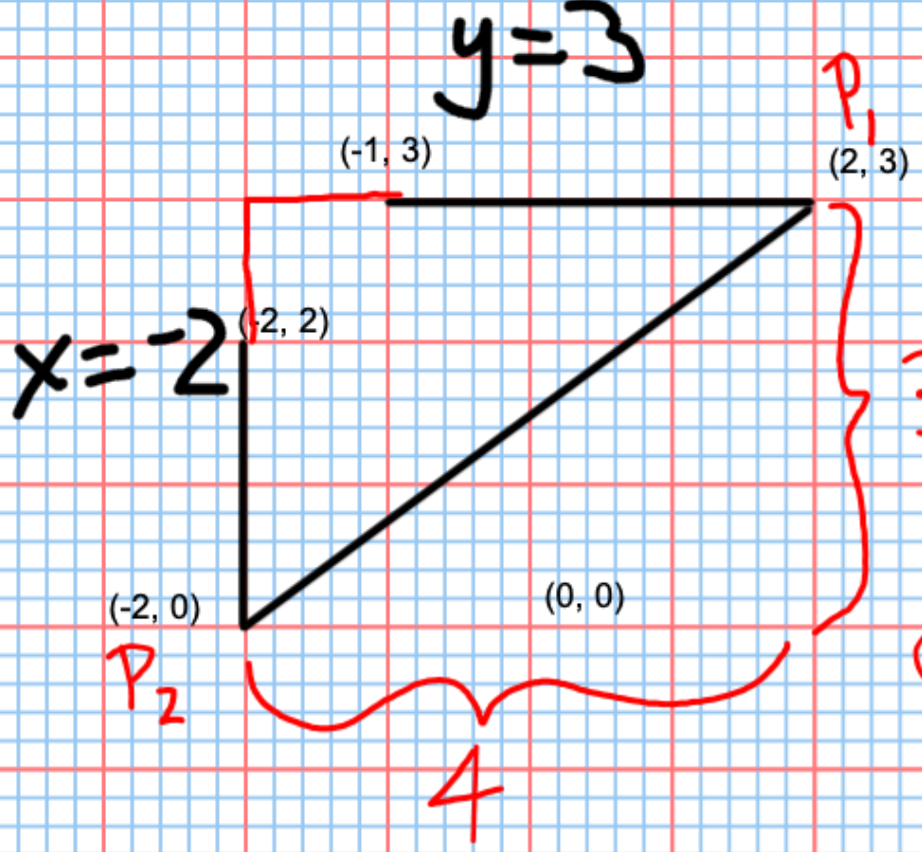

$$\text{slope} \rightarrow m = \frac{\text{change in } y}{\text{change in } x}$$

① find slope

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

② point slope formula

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

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

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

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