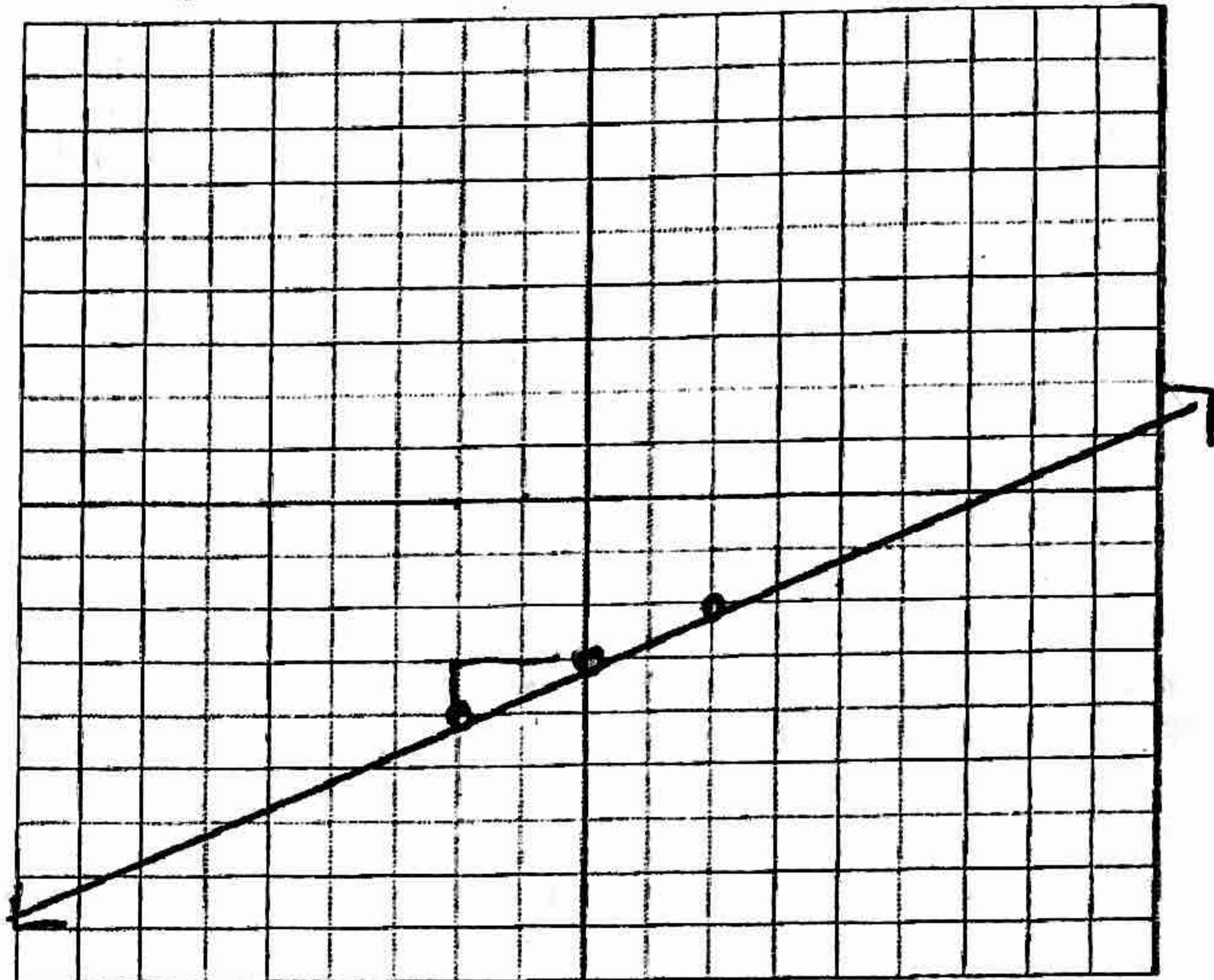


Determining Slope and y-intercept from an equation: Homework

Given the function $y = \frac{1}{2}x - 3$ and domain values $\{-2, 0, 2\}$. Make a table of values and graph.

x	y
-2	-4
0	-3
2	-2



1.) Using your table of values, determine the constant rate of change (slope).

$$\frac{+1}{+2} = \left(\frac{1}{2}\right)$$

2.) Using your graph, count the slope.

$$\frac{\text{up } 1}{\text{right } 2} = \left(\frac{1}{2}\right)$$

3.) Choose two points on the line and calculate the slope.

$$(-2, -4) \quad (0, -3)$$

$$\frac{-3 - (-4)}{0 - (-2)} = \left(\frac{1}{2}\right)$$

4.) What do you notice about the relationship of the original equation, $y = \frac{1}{2}x - 3$ and the slope that we just found?

Slope is coefficient of x

5.) What is the y-intercept? -3

6.) What do you notice about the relationship between the original equation, $y = \frac{1}{2}x - 3$ and the Y-INTERCEPT that we just found?

Constant added or subtracted from x .

7.) Recall that $y = mx + b$ where $m =$ slope and $b =$ y-intercept

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Slope-intercept form

Identify the slope (m) and y-intercept (b) of the following ^{linear} equations.

8.) $y = 5x$

$m = 5$

$b = (0, 0)$ or 0

9.) $y = 9 - 2x$

$m = -2$

$b = (0, 9)$ or 9

10.) $y = \frac{1}{3}x^4 + 2$

nonlinear

11.) $x = -5$

↕ $m = \text{undefined}$
 $b = \text{none}$

12.) $y = -8x + 1$

$m = -8$

$b = (0, 1)$ or 1

13.) $y = 1 - 3x$

$m = -3$

$b = (0, 1)$ or 1

14.) $y = 2 + \frac{1}{3}x$

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

$b = (0, 2)$ or 2

15.) $y = -7$

$y = 0x - 7$

$m = 0$ ←→

$b = (0, -7)$ or -7

16.) $y = x - 4$

$m = 1$

$b = (0, -4)$ or -4

17.) $y = 4x^2 - 8$

↻
nonlinear

18.) $y = \frac{2}{3}x + 1$

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

$b = (0, 1)$ or 1

19.) $y = -x + 3$

$m = -1$

$b = (0, 3)$ or 3