11/19 Review 5.1–5.3

* Function – definition
  – each input has exactly one output
* Domain – set of inputs (x)
* Range – set of outputs (y)

Find the missing value given $3x - 5y = 11$

a. $(\underline{?}, -1)$

$x = 2$

$3x - 5(-1) = 11$

$3x + 5 = 11$

$-5 \quad -5$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$

Find slope given

a. rise of -5, run of 20

$m = \frac{\text{rise}}{\text{run}} = \frac{-5}{20} = -\frac{1}{4}$

b. $(3, -4), (-1, -2)$

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - (-4)}{-1 - 3} = \frac{2}{-4}$

$-2+4$

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

If y varies directly as x, find the ① constant of variation, and ② write an equation of direct variation.

* $y = kx$

a. $y = 3.5$ when $x = 7$

① $\frac{3.5}{7} = \frac{k \cdot 7}{7}$

$\frac{1}{2} = \frac{3.5}{7} = k$

$0.5 = k$

② $y = 0.5x$

Find x when y is 10

③ Plug into ② $10 = 0.5x$

$20 = x$

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Find the slope-intercept form ($y = mx + b$) of the equation given the following:

a. $(0, -6), (-3, 3)$

① Find slope $m = \frac{y_2 - y_1}{x_2 - x_1}$

$$m = \frac{3-(-6)}{-3-0} = \frac{9}{-3} = -3$$

② Plug in the slope and one point to find the y-intercept, b.

→ $y = mx + b$ $m = -3$

$(0, -6)$

x, y

$-6 = -3(0) + b$

$-6 = 0 + b$

$-6 = b$

③ Write the equation, filling in m and b

$y = -3x - 6$

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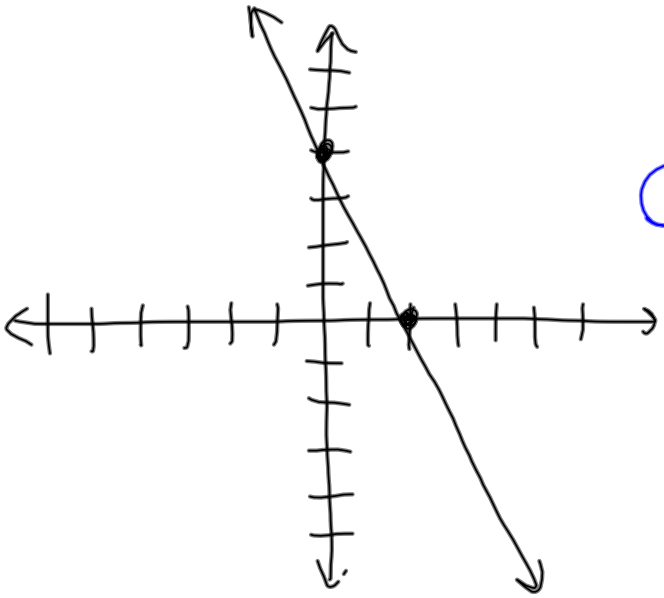
Ex:



$y = mx + b$

① $m = \frac{rise}{run}$

$m = \frac{+4}{-2}$

$m = -2$

② $b = 4$

③ $y = -2x + 4$

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