"Teacher" I.R.1

Notes (20 points) /20

Slope

- The change in the dependent variable over the change in the independent variable.

Slope-Intercept Form

- $y = mx + b$ where m is slope and b is the y-intercept

↳ always (0, b)

Table

X	Y	
−3	1	+2
0	3	+2
3	5	+2
6	7	+2
+3	+3	+3

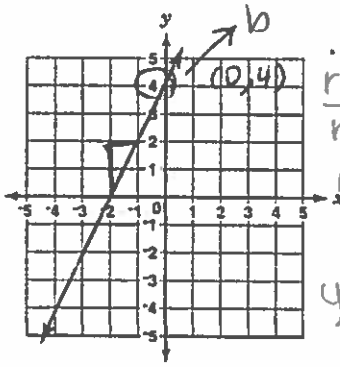
b

$\frac{\Delta y}{\Delta x} = \frac{2}{3}$

(0, b) b = 3

$y = \frac{2}{3}x + 3$

Graph



$\frac{\text{rise}}{\text{run}}$

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

$y = \frac{2}{1}x + 4$

Ordered Pairs

$(-3, 7)$ and $(0, -2)$ (x_1, y_1 and x_2, y_2)

b

$m = \frac{y_2 - y_1}{x_2 - y_2}$

$m = \frac{-2 - 7}{0 - -3} = \frac{-9}{3} = -3$

$y = 3x - 2$

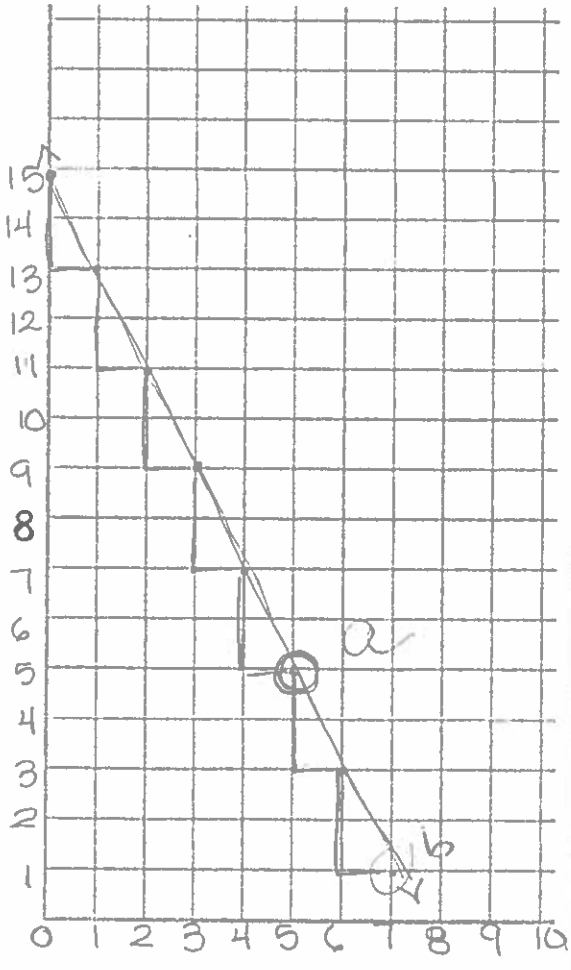
Real-Life Scenario

Daniel has \$15. He spends \$2 on (m) every candy bar he buys. Model the scenario with a slope-intercept form equation and a graph.

m = −2
b = 15

$y = mx + b$

$y = -2x + 15$



a. How many candy bars can he buy if he wants to have \$5 left?

$-5 = -2x + 15$

$+5 \quad +5$

$-2x = 20$

$\frac{-2x}{-2} = \frac{20}{-2}$

$x = -10$

-5 candy bars

$5 = -2x + 15$

$-15 \quad -15$

$-10 = -2x \rightarrow x = 5$

b. How much money does he have left after buying 7 candy bars?

$y = -2(7) + 15$

$y = -14 + 15$

$y = 1$

\$1