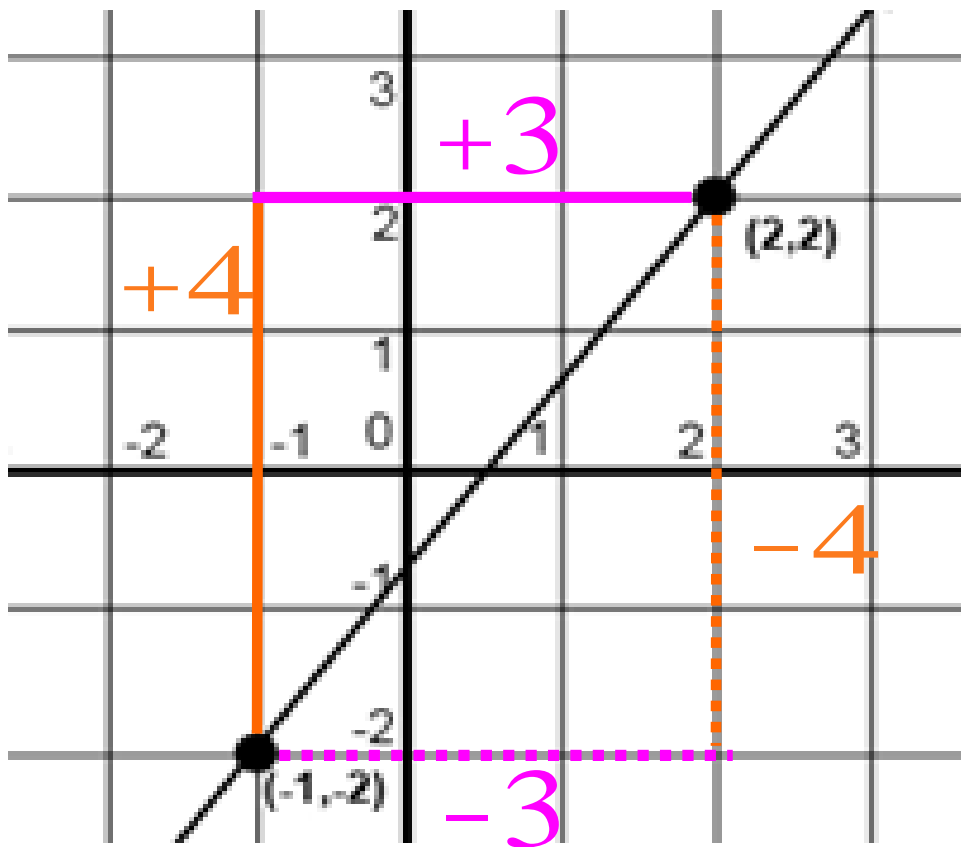[Using a Ski Jump to Illustrate Slope](#)

Chapter 4 Introduction
Slope and Graphing Review

I. Find the Slope on a Graph
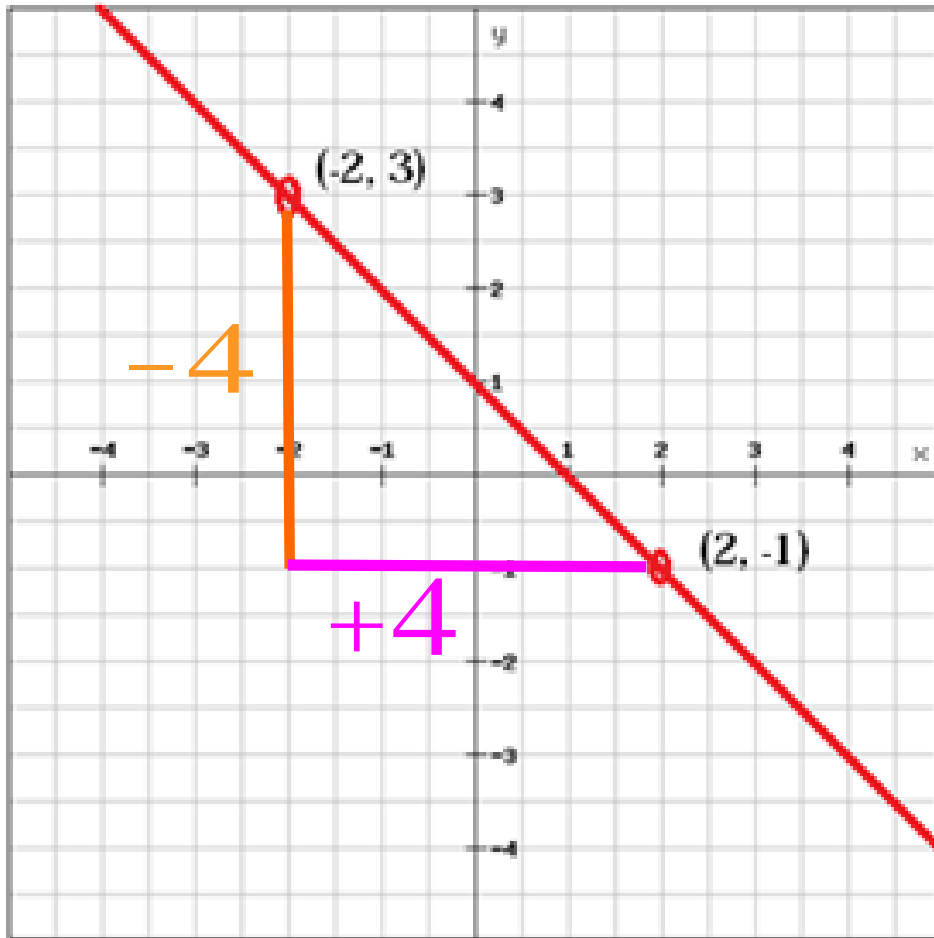

- Start with the point on the far left.

- Go UP 4 units.

- Go RIGHT 3 units.

$$\frac{rise \updownarrow}{run \leftrightarrow} = \frac{4}{3}$$

$$m = \frac{4}{3}$$

- What happens if you start with the point on the far right?

$$m = \frac{-4}{-3} = \frac{4}{3}$$

I. Find the Slope on a Graph

- Start with the point on the far left.

- Go DOWN 4 units.

- Go RIGHT 4 units.

$$\frac{rise \updownarrow}{run \leftrightarrow} = \frac{-4}{4}$$

$$m = -1$$

II. Find the Slope Using Two Points

$$m = \frac{y_2 - y_1}{x_2 - x_1} \text{ for } (x_1, y_1) \text{ and } (x_2, y_2)$$

A. $(2, 3)$ and $(4, -6)$

$$\frac{-6 - 3}{4 - 2} = -\frac{9}{2}$$

$$m = -\frac{9}{2}$$

B. $(-2, -3)$ and $(-4, -6)$

$$\frac{-6 - (-3)}{-4 - (-2)} = \frac{-6 + 3}{-4 + 2}$$

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

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

III. Find the Slope Using a Table

# of Days	Charge
x-values	*y*-values
1	$10.00
2	$20.00
5	$50.00

- Pick ANY 2 rows.

- Write each row as an ordered pair (*x*, *y*).

$$(1,10) \ \& \ (5, 50)$$

- Use the slope formula to find the RATE OF CHANGE.

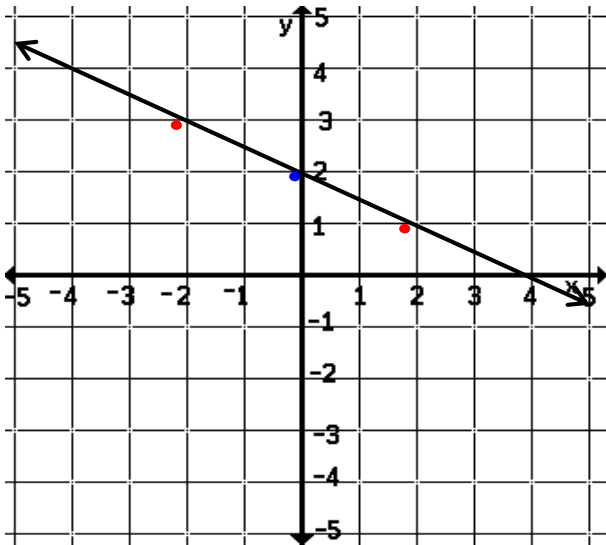$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{50 - 10}{5 - 1} = 10$$

$$\text{Rate of Change} = \$10 / day$$

IV. Write and Graph an Equation in Slope-Intercept Form

A. $\dfrac{1}{2}x + y = 2$

$$y = -\dfrac{1}{2}x + 2$$

m = $-\dfrac{1}{2}$ b = 2

- Graph the *y*-intercept.

- Use the slope to plot 2 other points.

- Draw a line to connect the points.
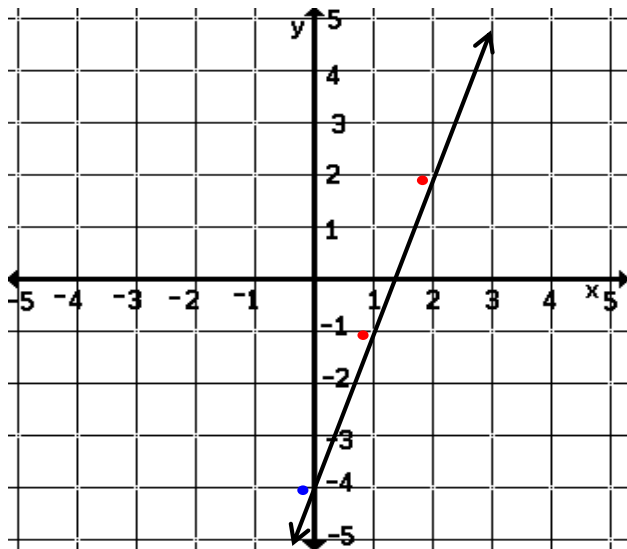
IV. Write and Graph an Equation in Slope-Intercept Form

B. $-2y = 2(4 - 3x)$

$-2y = 8 - 6x$

$y = -4 + 3x$ or $y = 3x - 4$
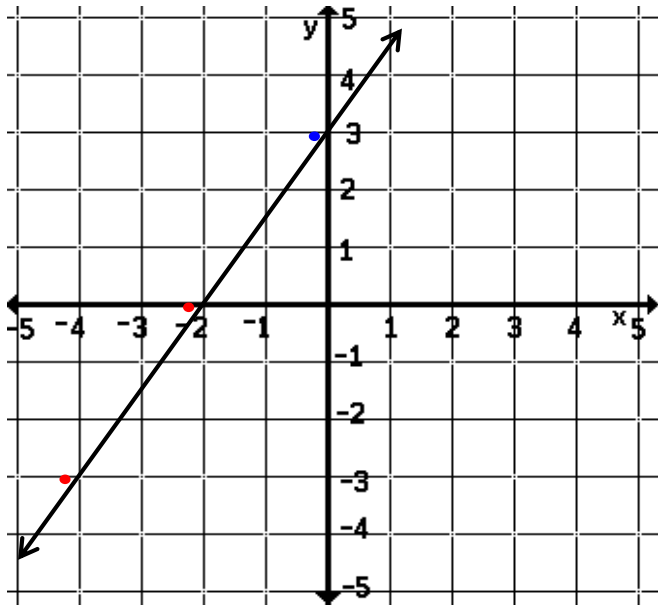
m = $\dfrac{\textbf{3 or }}{}$ $\dfrac{3}{1}$ b = -4

- Graph the *y*-intercept.

- Use the slope to plot 2 other points.

- Draw a line to connect the points.

C. $2y - 6 = 3x$

$2y = 3x + 6$

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

m = $\dfrac{3}{2}$ b = 3

D. $4x + 3y = 2x - 1$

$3y = -2x - 1$

$y = -\dfrac{2}{3}x - \dfrac{1}{3}$

m = $-\dfrac{2}{3}$ b = $-\dfrac{1}{3}$