Understanding Slope

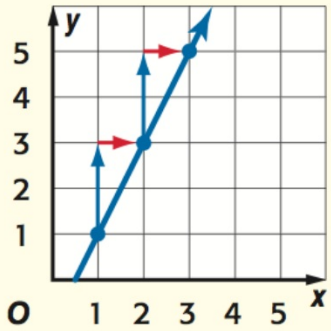
Slope

Key Concept

Slope is the rate of change between any two points on a line.

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x} \quad \begin{array}{l} \leftarrow \text{vertical change} \\ \leftarrow \text{horizontal change} \end{array}$$

$$= \frac{2}{1} \text{ or } 2$$



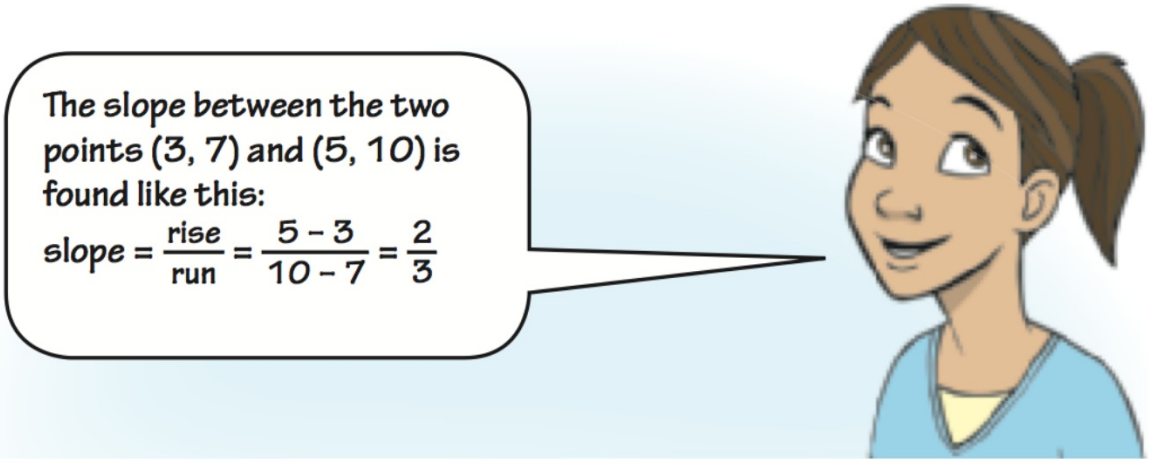
PHYSICAL SCIENCE **The table below shows the relationship between the number of seconds y it takes to hear the thunder after a lightning strike and the distance x you are from the lightning.**

Distance (x)	0	1	2	3	4	5
Seconds (y)	0	5	10	15	20	25

Example 1 **1** **SNACKS** The table below shows the number of small packs of fruit snacks y per box x. Graph the data. Then find the slope of the line. Explain what the slope represents.

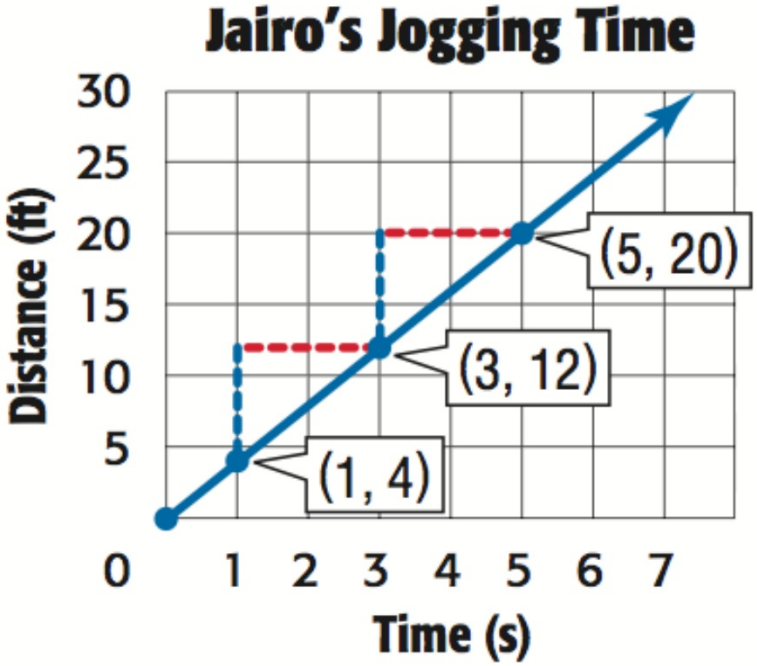
Boxes, x	3	5	7	9
Packs, y	24	40	56	72

FIND THE ERROR Marisol is finding the slope of the line containing the points (3, 7) and (5, 10). Find her mistake and correct it.

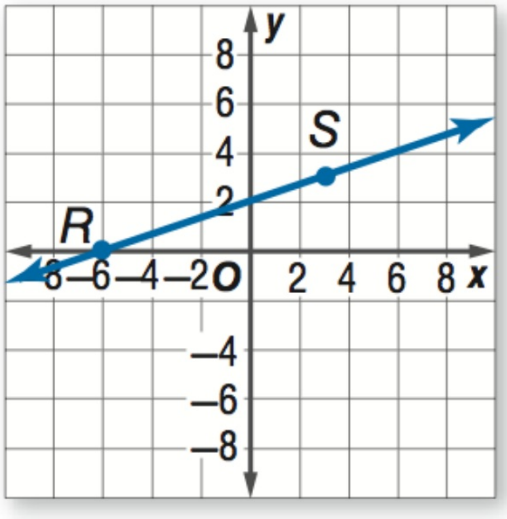


THINK
SOLVE
EXPLAIN

SHORT RESPONSE Find the slope of the line below that shows the distance Jairo traveled while jogging.



Line *RS* represents a bike ramp.



What is the slope of the ramp?

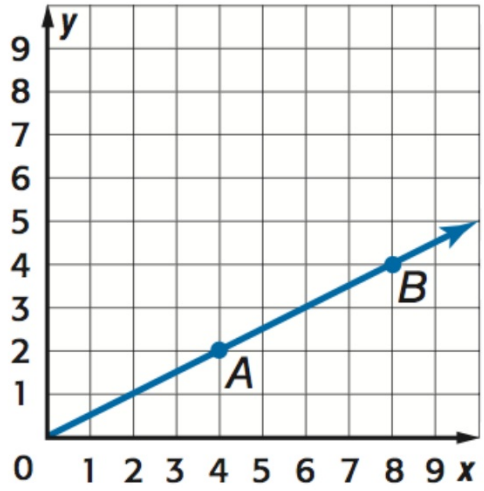
A. $-\frac{3}{1}$

B. $-\frac{1}{3}$

C. $\frac{1}{3}$

D. $\frac{3}{1}$

MULTIPLE CHOICE Line AB represents a ramp for loading a truck. What is the slope of the ramp? (Lesson 2C)



F. $\frac{2}{1}$

H. $-\frac{2}{1}$

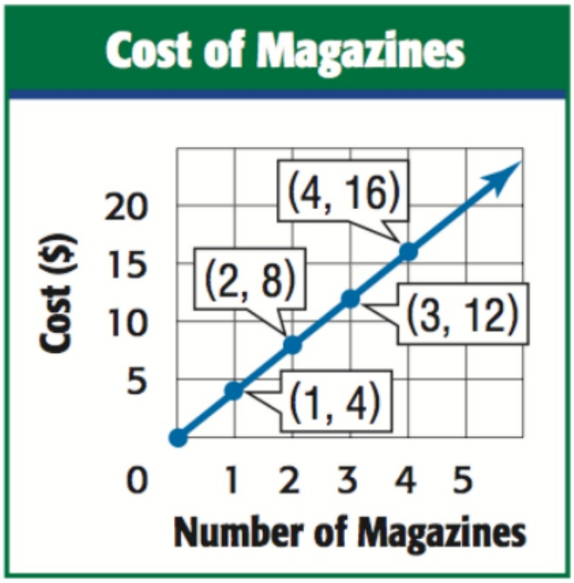
G. $\frac{1}{2}$

I. $-\frac{1}{2}$

WAGES Use the information in the table to find the constant rate of change in dollars per hour.

Wage ($)	0	9	18	27
Time (h)	0	1	2	3

MAGAZINES Use the graph to find the constant rate of change in cost per magazine.



Find the slope of each equation

$y = 2x$

$y = 2x + 1$

$y = 7x$

$y = 5x$

$y = x + 1$

$y = 2x$

$y = 2x - 3$

$y = -x + 1$

$y = -3x$

MAKE A CONJECTURE Explain in two or more sentences how positive and negative coefficients affect the graphs of the functions.

The table shows the relationship between Celsius and Fahrenheit temperatures.

Temperature	
Celsius	Fahrenheit
0	32
10	50
20	68
30	86
40	104

Is the relationship linear ? Why or why not ?