

**LESSON**  
**6-3**

# Comparing Functions

## Practice and Problem Solving: A/B

Find the slopes of linear functions  $f$  and  $g$ . Then compare the slopes.

1.  $f(x) = 5x - 2$

$x$	0	1	2	3	4
$g(x)$	-3	-1	1	3	5

slope of  $f =$  \_\_\_\_\_

slope of  $g =$  \_\_\_\_\_

Find the  $y$ -intercepts of linear functions  $f$  and  $g$ . Then compare the two intercepts.

2.

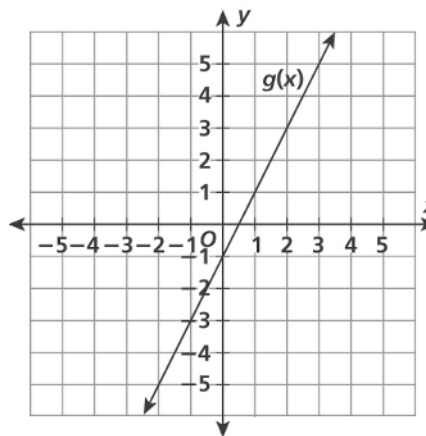
$x$	0	1	2	3	4
$f(x)$	-3	-1	1	3	5

$y$ -intercept of  $f$ : \_\_\_\_\_

$y$ -intercept of  $g$ : \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Connor and Pilar are in a rock-climbing club. They are climbing down a canyon wall. Connor starts from a cliff that is 200 feet above the canyon floor and climbs down at an average speed of 10 feet per minute. Pilar climbs down the canyon wall as shown in the table.

<b>Time (min)</b>	0	1	2	3
<b>Pilar's height (ft)</b>	242	234	226	218

3. Interpret the rates of change and initial values of the linear functions in terms of the situations that they model. Compare the results and what they mean.

Connor

Pilar

Initial value: \_\_\_\_\_

Initial value: \_\_\_\_\_

Rate of change: \_\_\_\_\_

Rate of change: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## Reteach

Functions can be represented in many forms. You can identify the slope and y-intercept from any format.

Representation	Slope	y-intercept
Equation written in slope-intercept form: $y = mx + b$	Value of $m$	Value of $b$
Table of values	Substitute any two ordered pairs into the slope formula. $m = \frac{y_2 - y_1}{x_2 - x_1}$	Substitute the slope and one ordered pair $(x, y)$ into the slope-intercept formula. $y = mx + b$ Solve for $b$ .
Graph	Choose two points on the line. Find the ratio of vertical change to horizontal change.	Find the point where the line crosses the y-axis. You may need to extend the graph.

Find the slopes and y-intercepts of the linear functions  $f$  and  $g$ . Then compare the graphs of the two functions.

1.  $f(x) = -\frac{1}{2}x - 2$

<b>x</b>	-2	0	2	4	6
<b>g(x)</b>	4	1	-2	-5	-8

slope of  $f =$  \_\_\_\_\_

slope of  $g =$  \_\_\_\_\_

y-intercept of  $f:$  \_\_\_\_\_

y-intercept of  $g:$  \_\_\_\_\_

2.  $f(x) = 6x - 1$

slope: of  $f =$  \_\_\_\_\_ of  $g =$  \_\_\_\_\_

y-intercept: of  $f =$  \_\_\_\_\_ of  $g =$  \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

