

## UNIT 3 • MODELING AND ANALYZING QUADRATIC FUNCTIONS

## Lesson 3: Interpreting and Analyzing Quadratic Functions

## Practice 3.3.3: Identifying the Average Rate of Change

A

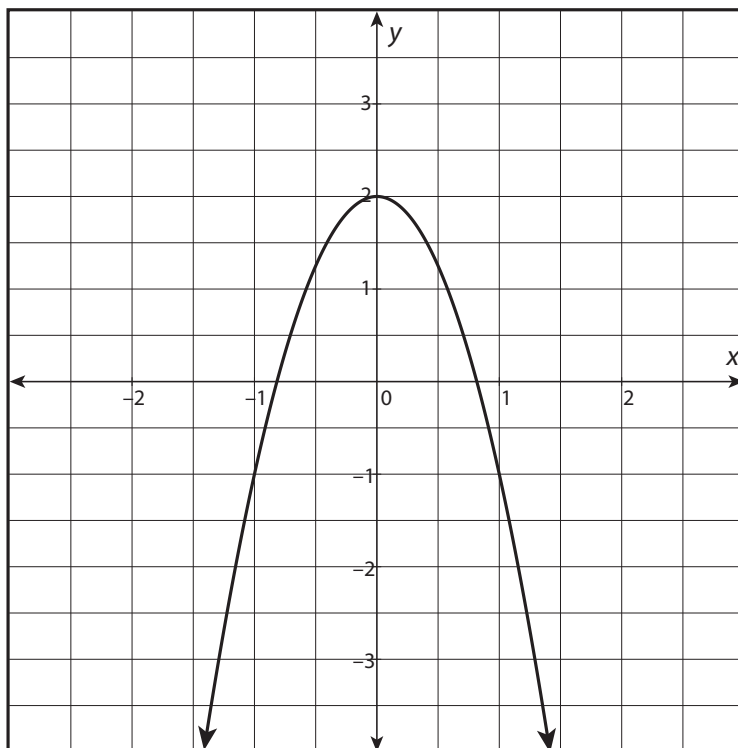
For problems 1–6, calculate the average rate of change of each function between  $x = -1$  and  $x = 1$ .

1.  $f(x) = 2(x + 1)^2 - 3$

2.  $g(x) = 4 - 3(x - 1)^2$

3.  $h(x) = x^2 - 4x + 6$

4.



5.

$x$	$y$
-2	-1
-1.5	-1.75
-1	-4
-0.5	-7.75
0	-13
0.5	-19.75
1	-28
1.5	-37.75

**continued**

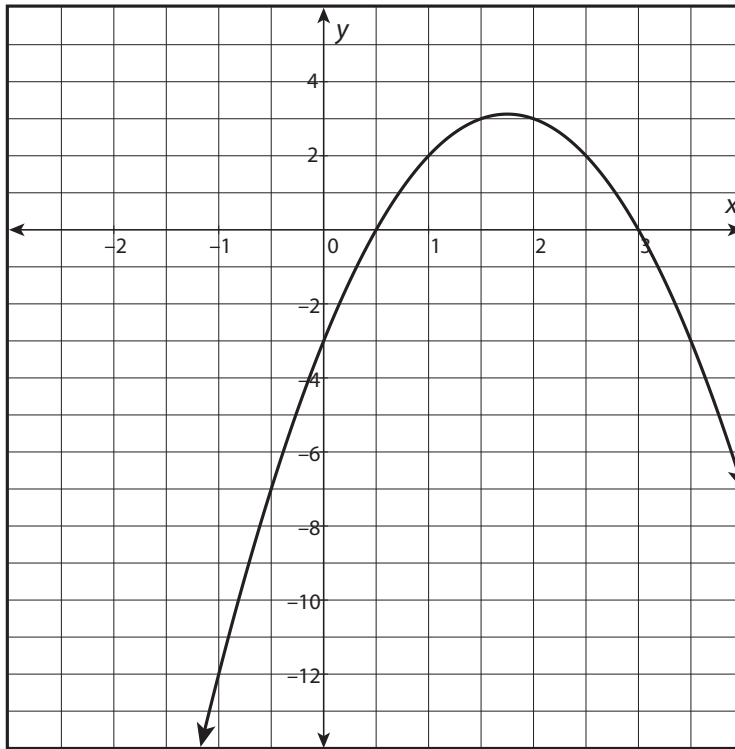
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6.



For problems 7–9, determine whether the average rate of change is greater between  $x = -2$  and  $x = 0$  or between  $x = 0$  and  $x = 2$ .

7.  $y = \frac{1}{2}(x+2)^2 - 3$

8.  $a(x) = -x^2 + 8x + 3$

9.  $f(x) = 5x^2 - 6x + 4$

Read the scenario and use the information in it to answer the question.

10. A drop of rain falls from a height of 1,400 feet above the ground. The function  $h(t) = -16t^2 + 1400$  is used to model the raindrop's height,  $h(t)$ , in feet  $t$  seconds after it starts to fall. What is the raindrop's average rate of change between 2 seconds and 3 seconds after it falls?