UNIT 5 • COMPARING AND CONTRASTING FUNCTIONS

Lesson 3: Function Transformations

Assessment

Pre-Assessment

Circle the letter of the best answer.

1. Find g(x) such that g(x) is a translation of f(x) = 3x - 1 upward by 3 units.

a.
$$g(x) = 6x - 1$$

c.
$$g(x) = 3x - 4$$

b.
$$g(x) = 3x + 2$$

d.
$$g(x) = 3x + 8$$

2. Suppose $f(x) = 3x^2 + 1$. Find a function g(x) such that g(x) is the reflection of f(x) across the x-axis.

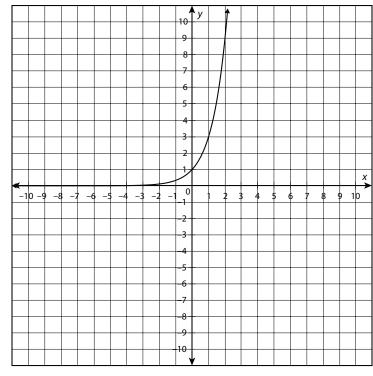
a.
$$g(x) = -3x^2 - 1$$

c.
$$g(x) = 3x^2 + 1$$

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

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

3. Is the following graph even, odd, or neither?



a. even but not odd

c. both even and odd

b. odd but not even

d. neither even nor odd

continued

UNIT 5 • COMPARING AND CONTRASTING FUNCTIONS

Lesson 3: Function Transformations

Assessment

4. Find g(x) such that g(x) is a vertical stretch of $f(x) = 3^x$ by a factor of 2.

a.
$$g(x) = 3^{2x}$$

c.
$$g(x) = 2(3)^x$$

b.
$$g(x) = \frac{1}{2}(3)^x$$

d.
$$g(x) = 3^{\frac{x}{2}}$$

5. Let $f(x) = x^2 + 5$. If g(x) is the translation 5 units down of f(x), is g(x) even, odd, or neither?

a. g(x) is both even and odd.

c. g(x) is odd but not even.

b. g(x) is even but not odd.

d. g(x) is neither even nor odd.