Progress Assessment

Circle the letter of the best answer.

1. How much does $f(x) = 3x^2 + 3$ change from $x = 0$ to $x = 1$?

   a. 0
   b. 6
   c. 3
   d. 1

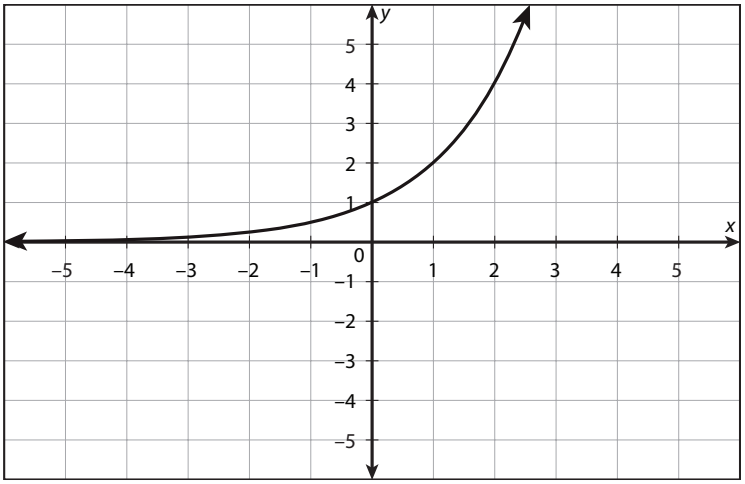
2. Write an expression to describe the sequence 2, 4, 6, 8, 10 . . . such that $n = 1$ corresponds to the fist term.

   a. $2n$
   b. n
   c. $\frac{n}{2}$
   d. $n + 2$

3. A line whose y-intercept is 2 has a slope of –3. What is its equation in slope-intercept form?

   a. $y = -3x + 2$
   b. $y = 3x - 2$
   c. $y = -3x - 2$
   d. $y = 3x + 2$

4. Is the following graph a linear, quadratic, or exponential function?



   a. linear
   b. quadratic
   c. exponential
   d. none of the above

continued

Assessment

5. Bob charges $10 upfront to mow a lawn, along with $3 per hour. How much does he make in 3 hours?

   a. $16
   b. $19
   c. $22
   d. $9

6. The half-life of a radioactive isotope is 5 years. How much of a 200-gram sample will remain after 15 years?

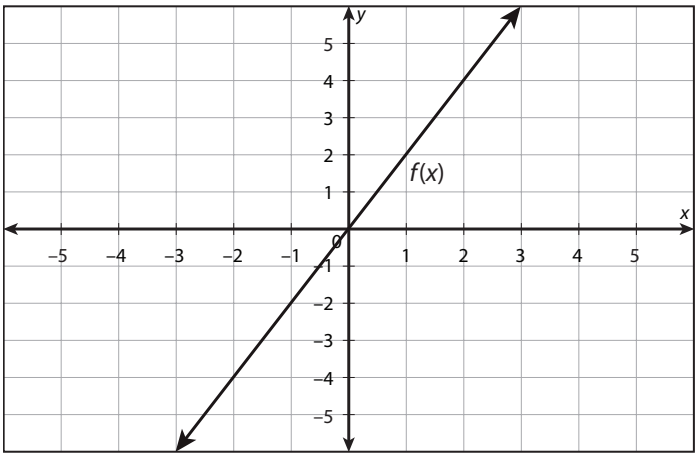
   a. 200 grams
   b. 100 grams
   c. 250 grams
   d. 25 grams

7. A cab charges $7 upfront and $4 per mile. A passenger is driven 6 miles. How much does the passenger pay?

   a. $31
   b. $27
   c. $35
   d. $24

8. Determine whether the following equation or graph is greater when $x = 0$.

   $g(x) = 3^x$



   a. $f(x)$ is greater when $x = 0$.
   b. $g(x)$ is greater when $x = 0$.
   c. They are equal when $x = 0$.
   d. There is not enough information to determine this.

continued

9. Determine whether the following table or equation has a greater rate of change from $x = 1$ to $x = 2$.

$g(x) = 4x + 2$

x	$f(x)$
1	3
2	9
3	27
4	81
5	243

a. $f(x)$ has a greater rate of change.

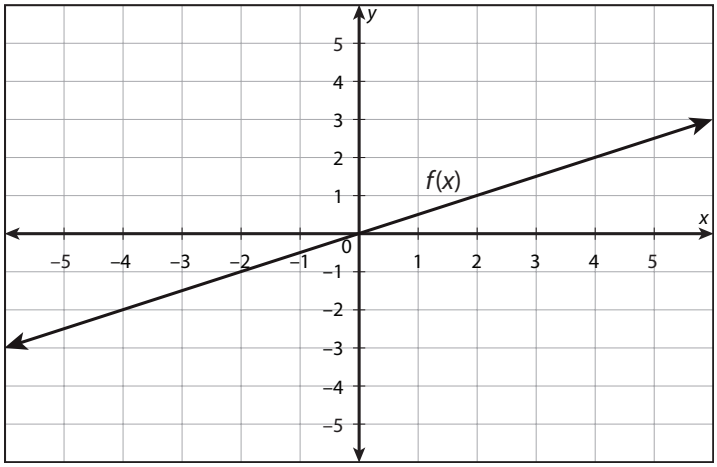
b. $g(x)$ has a greater rate of change.

c. Their rates of change are equal.

d. There is not enough information to determine this.

10. Determine whether the following graph or table has a greater rate of change from $x = 3$ to $x = 4$.

x	$g(x)$
1	1
2	4
3	9
4	16
5	25



a. $f(x)$ has a greater rate of change.

b. $g(x)$ has a greater rate of change.

c. Their rates of change are equal.

d. There is not enough information to determine this.

continued

Assessment

Use what you have learned to complete the following problem.

11. Dana and Thomas are both selling apples. The following table shows the number of apples Dana sold after x hours. The number of apples Thomas sold is characterized by $g(x) = 2x + 1$.

x	1	2	3	4
$f(x)$	3	6	12	24

a. What is the rate of change for $f(x)$ between $x = 3$ and $x = 4$?

b. What is the rate of change for $g(x)$ between $x = 3$ and $x = 4$?

c. Who has sold more apples after 3 hours?

d. Is there a translation in $f(x)$? What about $g(x)$?