Progress Assessment

Circle the letter of the best answer.

1. What is true about the set of all solutions for $y = f(x)$?

   a. It can be graphed.   c. It is a set of ordered pairs.

   b. It is infinite.   d. all of the above

2. The graphical representation of the solution set for $y = f(x)$ is _____.

   a. always a straight line   c. a plane

   b. called a curve   d. a circle

3. Which of the following relations is a function?

   a. {(2, 1), (1, 1), (4, 6), (5, 1)}   c. {(1, 0), (1, 1), (0, 1), (0, 0)}

   b. {(9, 3), (6, 3), (5, 8), (5, 2)}   d. {(1, 1), (1, 2), (2, 3), (3, 5)}

4. If $f(x) = 2x + 7$, what is $f(x + 2)$?

   a. $2x + 11$ c. $2x + 9$
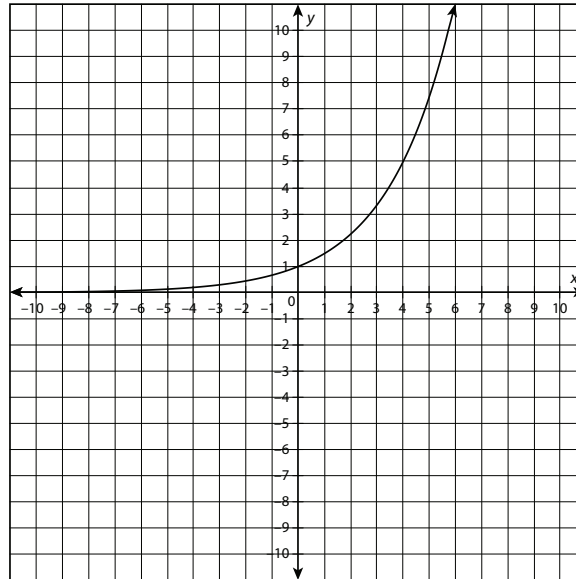
   b. $2x + 14$ d. $x + 2$

Assessment

5. If the domain of the graphed function is all real numbers, what is the range of the function?

    a. all real numbers   c. $f(x) > 0$

    b. $x < 6$ d. $f(x) \geq 0$

6. If $f(x) = 2x + 1$, and the domain of f is {5, 25, 50}, what is the range of f?

    a. {5, 25, 50}   c. {11, 51, 101}

    b. {10, 50, 100}   d. {0, 5, 10}

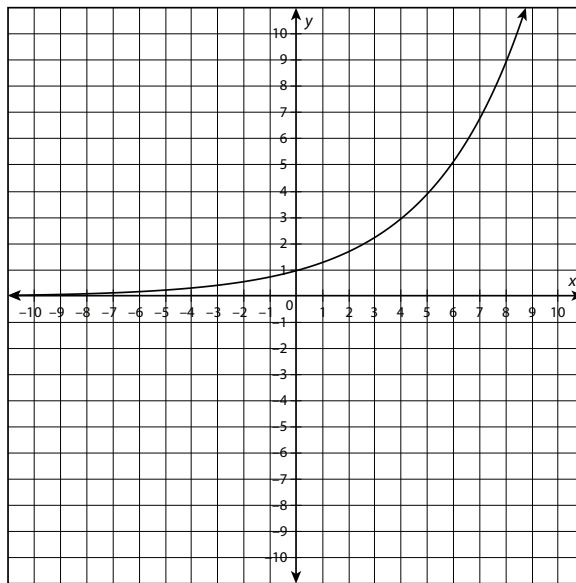*continued*

7. Given the graph of the linear function $f(x)$, what is $f(6)$?

   a. 5   c. −4
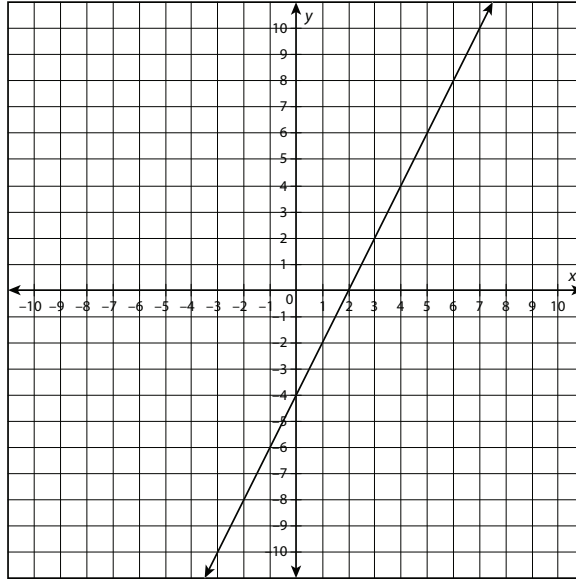
   b. 8   d. 0

8. Given the graph of $f(x)$, what is $f(4)$?

   a. 3   c. 2.25

   b. 5   d. 8

continued

Assessment

9. Fernando wants to build an opera house. After initially approaching 6 investors, Fernando begins systematically approaching 2 new investors every day. This situation is expressed by the function $f(x) = 2x + 6$. Which equation represents the number of investors Fernando will have approached after 10 days?

     a. $f(10) = 6$ c. $f(26) = 10$

     b. $f(10) = 26$ d. $f(6) = 10$

10. The contents of the fuel tank of Sierra's car can be modeled by the function $g(x) = -0.04x + 15$, where x represents the number of miles driven and $g(x)$ represents the number of gallons of gas in the tank. Sierra started her trip with a full tank of gas and traveled 200 miles. Which equation represents the amount of gas that Sierra had left in her car's fuel tank at the end of the trip?

     a. $g(200) = 7$ c. $g(7) = 200$

     b. $g(200) = 8$ d. $g(8) = 200$

Read the scenario and use the information to complete the problem that follows.

11. Luisa is saving money to buy a new smartphone that costs $430. She started with $150 and every month she saves $20. Her savings can be modeled by the function $s(x) = 20x + 150$, where x represents the number of months she saves and $s(x)$ represents how much she has saved.

     a. What are the domain and range of the function?

     b. Evaluate the function for $x = 4$, 8, and 12, then represent these results graphically.

     c. Interpret part b in the context of the problem.

     d. Write a statement using function notation that shows when Luisa will reach her goal. Then use words to describe the symbolic statement.