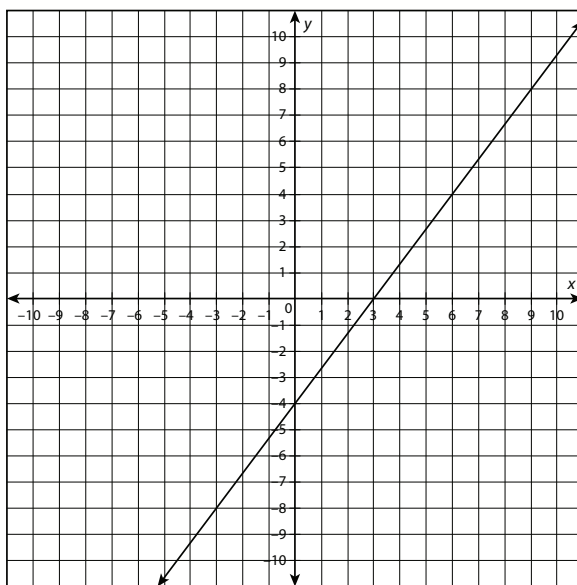## UNIT 2 • REASONING WITH LINEAR EQUATIONS AND INEQUALITIES
Lesson 6: Functions and Graphing

Practice 2.6.3: Function Notation and Evaluating Functions   A

For problems 1–4, evaluate the given functions and determine the range of each.

1. Evaluate $f(x) = 2x - 8$ over the domain {0, 1, 3, 8}. What is the range of $f(x)$?

2. Evaluate $g(x) = x - 13$ over the domain {2, 4, 6, 8}. What is the range of $g(x)$?

3. Evaluate $f(x) = 3x + 1$ over the domain {1, 2, 3, 4}. What is the range of $f(x)$?

4. Evaluate $r(x) = 2x - 1$ over the domain {0, 1, 2, 3}. What is the range of $r(x)$?

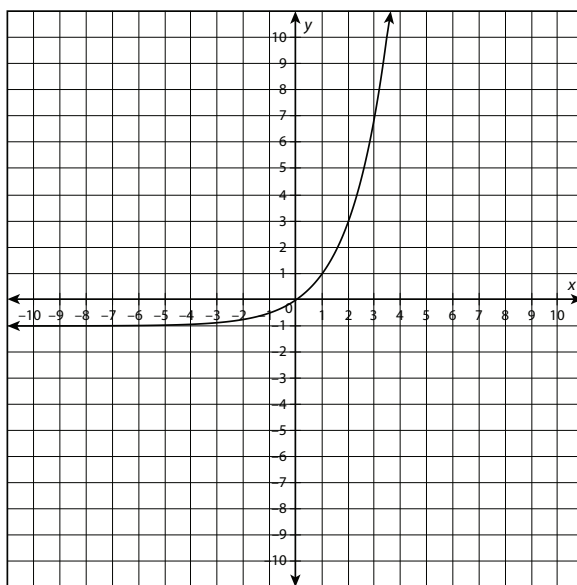Use what you know about function notation and graphing functions to complete problems 5–10.

5. Given the graph of $f(x)$, what is $f(-3)$?

6. Given the graph of $f(x)$, what is $f(2)$?

7. A growing company has been hiring employees at a steady rate of 1 new hire per month. The company started with 2 employees. The growth of the company can be modeled by the function $g(x) = x + 2$, where x represents the number of months, and $g(x)$ represents the number of employees. Evaluate the function over the domain {3, 6, 18, 24}. Interpret the results and use a graph to explain your answer.

8. Manuel's school issues report cards 6 times per school year. Manuel transferred to the school in the middle of the school year, so didn't get 3 of the report cards. The function that models this situation is $f(x) = 6x - 3$, where x is the number of years report cards are issued and $f(x)$ is the number of report cards Manuel receives. Evaluate the function over the domain {1, 2, 3, 4}. Interpret the results and use a graph to explain your answer.

9. A postal delivery service charges $3.40 per package and an additional $0.50 for each ounce the package weighs. The function can be modeled by $f(x) = 0.5x + 3.4$, where x represents the number of ounces and $f(x)$ represents the total delivery charge. Tom ships four packages with the following weights: 2 ounces, 3.5 ounces, 15 ounces, and 21.3 ounces. Write four statements using function notation that you can use to evaluate the function given each of these weights. Interpret the results in terms of the context of the function.

10. Every month, Amy withdraws $200 from her checking account but deposits $410. There is currently $680 in the account. This situation is modeled by the function $f(x) = 410x - 200x + 680 = 210x + 680$, where x is the number of months and $f(x)$ is the amount in the account. Amy wants to know how much she will have in the account after 3, 6, and 12 months. Use function notation to write three statements you can use to evaluate the function for each time frame. Interpret the results in terms of the context of the function.