

4-6 Study Guide and Intervention *(continued)***Functions**

Function Values Equations that are functions can be written in a form called **function notation**. For example, $y = 2x - 1$ can be written as $f(x) = 2x - 1$. In the function, x represents the elements of the domain, and $f(x)$ represents the elements of the range. Suppose you want to find the value in the range that corresponds to the element 2 in the domain. This is written $f(2)$ and is read “ f of 2.” The value of $f(2)$ is found by substituting 2 for x in the equation.

Example If $f(x) = 3x - 4$, find each value.

a. $f(3)$

$$\begin{aligned} f(3) &= 3(3) - 4 && \text{Replace } x \text{ with } 3. \\ &= 9 - 4 && \text{Multiply.} \\ &= 5 && \text{Simplify.} \end{aligned}$$

b. $f(-2)$

$$\begin{aligned} f(-2) &= 3(-2) - 4 && \text{Replace } x \text{ with } -2. \\ &= -6 - 4 && \text{Multiply.} \\ &= -10 && \text{Simplify.} \end{aligned}$$

Exercises

If $f(x) = 2x - 4$ and $g(x) = x^2 - 4x$, find each value.

1. $f(4)$

2. $g(2)$

3. $f(-5)$

4. $g(-3)$

5. $f(0)$

6. $g(0)$

7. $f(3) - 1$

8. $f\left(\frac{1}{4}\right)$

9. $g\left(\frac{1}{4}\right)$

10. $f(a^2)$

11. $f(k + 1)$

12. $g(2c)$

13. $f(3x)$

14. $f(2) + 3$

15. $g(-4)$