

NAME: \_\_\_\_\_

## UNIT 3 • LINEAR AND EXPONENTIAL FUNCTIONS

### Lesson 7: Operating on Functions and Transformations

#### Practice 3.7.1: Operating on Functions

Find the value of each operation using the given functions.

For problems 1 and 2,  $f(x) = 5x - 2$  and  $g(x) = 3x + 5$ .

1. Find  $(f + g)(x)$ .
2. Find  $(f - g)(x)$ .

For problems 3 and 4,  $f(x) = 5^x$  and  $g(x) = 4$ .

3. Find  $(f \cdot g)(x)$ .
4. Find  $(f \div g)(x)$ .

For problems 5–8,  $f(x) = -2$  and  $g(x) = 7x + 4$ .

5. Find  $(f + g)(x)$ .
6. Find  $(f - g)(x)$ .
7. Find  $(f \cdot g)(x)$ .
8. Find  $(f \div g)(x)$ .

Use what you know about functions to complete problems 9 and 10.

9. Jenna makes \$7 per hour babysitting plus a flat fee of \$4 to pay for her round-trip bus fare to the home. Write a function to represent this scenario. Her bus fare is increased to \$5 for the round trip. What is the new function to represent Jenna's take-home pay? How has the function rule changed?
10. Jorge is growing bacteria for an experiment in science class. He starts with 1 bacterium, which doubles every 4 hours. Write a function to represent this scenario. Jorge's classmate Jacob grows the same type of bacteria but starts with 3 organisms. What is the function rule to represent the number of bacteria in Jacob's experiment? How are the two function rules different?