Name _____ Class _____ Date _____

4-5 Practice

Form K

Writing a Function Rule

Write a function rule that represents each sentence.

1. 8 less than one third of x is y. $y = \frac{1}{3}x - 8$

2. 12 more than the quotient of a number t and 7 is v. $\frac{t}{7} + 12 = v$

3. z is 6 more than twice y. $z = 2y + 6$

4. 10 more than 8 times a number a is b. $8a + 10 = b$

For Exercises 5–7, write a function rule that represents each situation.

5. The price p of a large, cheese pizza is \$7.95 plus \$0.75 for each topping t on the pizza. $p = 0.75t + 7.95$

6. Jaquelyn's earnings m are a function of the number of lawns n she mows at a rate of \$12 per lawn. $m = 12n$

7. The total fees f of a book club membership are \$10 per month m and a one-time administrative fee of \$4.75. $f = 10m + 4.75$

8. Eric is 2 years younger than 2 times his sister's age. Write a rule that represents Eric's age a as a function of his sister's age s. How old is Eric if his sister is 11?
$a = 2s - 2$; 20

4-5 Practice (continued) Form K

Writing a Function Rule

9. An online music club charges $5.75 for the first music download and $2 for each additional download per month. Write a rule for describing the total monthly fees f as a function of additional downloads d. What are the fees for 15 music downloads in a month? $f = 2d + 5.75$; $33.75

10. Write a function rule for the area of a rectangle whose length is 6 ft more than its width. What is the area of the rectangle when its width is 12 ft?

$A = (w + 6)(w) = w^2 + 6w$; 216 ft^2

11. Write a function rule for the area of a rectangle with a length 7 m more than three times its width. What is the area of the rectangle when its width is 3 m?

$A = (3w + 7)(w) = 3w^2 + 7w$; 48 m^2

12. Write a function rule for the area of a triangle with a base 10 cm less than 8 times its height. What is the area of the triangle when its height is 5 cm?

$A = 4h^2 - 5h$; 75 cm^2

13. Reasoning Is the graph of a function that relates a square's side length to its perimeter *continuous* or *discrete*? Explain.

continuous; The function that models this relationship is $P = 4s$, where P is the perimeter of the square and s is the side length. This function is continuous because the side length can be any real number greater than 0.

14. Open-Ended Describe a real-world situation that can be represented by a linear function. Describe a change that could occur in this situation that would change it to a nonlinear function.

Answers may vary. Sample: Adding money to a non-interest bearing bank account. If the money goes into a bank account that earns compound interest, then the function would become nonlinear.