Name _____ Date _____ Class _____

LESSON 9-5

Practice B

Functions and Their Inverses

Find the inverse of each function. Determine whether the inverse is a function and state its domain and range.

1. $k(x) = 10x + 5$

2. $d(x) = 6 - 2x$

3. $f(x) = (x - 5)^2$

4. $g(x) = \frac{4 - x}{2}$

5. $h(x) = \sqrt{x^2 - 9}$

6. $b(x) = 2\log x$

Determine by composition whether each pair of functions are inverses.

7. $q(x) = \sqrt{x} - 4$ and $r(x) = x^2 + 4$ for $x \geq 0$

8. $s(x) = \frac{2}{x - 2}$ and $t(x) = \frac{x + 2}{-2}$

9. $u(x) = \frac{x^2}{4} - 1$ for $x \geq -1$ and $v(x) = \pm 2\sqrt{x + 1}$

10. $A(x) = \log (x - 1)^4$ and $B(x) = 1 + \log^{-1}\left(\frac{x}{4}\right)$

Solve.

11. So far, Rhonda has saved \$3000 for her college expenses. She plans to save \$30 each month. Her college fund can be represented by the function $f(x) = 30x + 3000$.

a. Find the inverse of $f(x)$.

b. What does the inverse represent?

c. When will the fund reach \$3990?

d. How long will it take her to reach her goal of \$4800?