NAME _____ DATE _____ PERIOD _____

1-7 Practice

Inverse Relations and Functions

Graph each function using a graphing calculator, and apply the horizontal line test to determine whether its inverse function exists. Write *yes* or *no*.

1. $f(x) = 3|x| + 2$

2. $f(x) = -\sqrt{x + 3} - 1$

3. $f(x) = x^5 + 5x^3$

4. $f(x) = \frac{x}{5} + 9$

Determine whether *f* has an inverse function (Graph & Horizontal Line Test). If YES, find the inverse function Algebraically and state any restrictions on its domain.

5. $f(x) = \sqrt[3]{x - 1}$

6. $f(x) = \frac{2x - 1}{x + 7}$

7. $f(x) = \frac{4}{(x-3)^2}$

8. $f(x) = \sqrt{x - 2}$

Show algebraically (Composition of Function) that *f* and *g* are inverse functions.

9. $f(x) = 2x + 3$; $g(x) = \frac{x - 3}{2}$

10. $f(x) = \frac{x^2}{2} - 6$; $x \geq 0$; $g(x) = \sqrt{2x + 12}$

11. Use the graph of $f(x)$ to graph $f^{-1}(x)$.