Chapter 6 Practice Test Name_____

1. Evaluate $\sqrt[3]{-2358}$ using a calculator. Round the result to two decimal places if appropriate.

Simplify the expression. Assume all variables are positive.

2. $\dfrac{3^{2/3}}{3^{-1/3}}$

3. $8\sqrt{8} - 4\sqrt{18}$

4. $x^{1/2} \cdot x^{3/4}$

5. $x^{15} \cdot x^{20}$

Let $f(x) = 2x^2 - 5$ and $g(x) = 3x^2$. Perform the indicated operation.

6. $f(x) + g(x)$

7. $\frac{f(x)}{g(x)}$

8. $g(x) \cdot g(x)$

9. $g(f(2))$

10. $g(f(x))$

11. $f(g(x))$

Find the inverse of the function.

12. $f(x) = \frac{1}{16}x^4$, $x \geq 0$

13. $f(x) = \frac{2x+5}{3}$

Verify that f and g are inverse functions.

14. $f(x) = 2x + 5$, $g(x) = \frac{x-5}{2}$

15. $f(x) = \sqrt[3]{x}$, $g(x) = x^3$

Solve the equation.

16. $4 = \sqrt[3]{2x-8}$

17. $(x^2 - 1)^{2/3} + 2 = 6$

18. $x + 2 = \sqrt{28-x}$

19. $\sqrt{3x+5} = \sqrt{4x-2}$

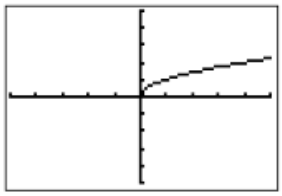
Name_____ Ch. 6 Practice Test – No calculator

1. $\sqrt[3]{-8}$ 2. $\sqrt[5]{32}$ 3. $-27^{4/3}$

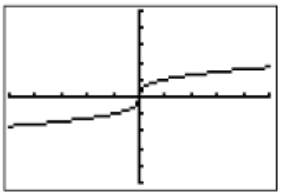
For each function, complete the following.

a. Identify the basic shape. (Choose from A, B, C, or D below.)
b. State whether the graph is steeper, flatter, or the same as the parent graph.
c. Identify any horizontal shift. Specify left or right. If none, write "none."
d. Identify any vertical shift. Specify up or down. If none, write "none."
e. State the domain and range.

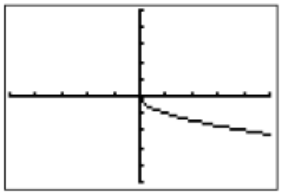
A



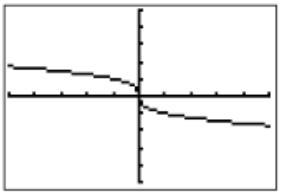
B



C



D



4. $y = 2\sqrt{x}$

a. Basic shape_____

b. Flatter Steeper Same
(circle one)

c. Horizontal Shift_____

d. Vertical Shift_____

e. Domain_____

Range_____

5. $y = 2\sqrt{x+2} - 2$

a. Basic shape_____

b. Flatter Steeper Same
(circle one)

c. Horizontal Shift_____

d. Vertical Shift_____

e. Domain_____

Range_____

6. $y = -3\sqrt[3]{x}$

a. Basic shape_____

b. Flatter Steeper Same
(circle one)

c. Horizontal Shift_____

d. Vertical Shift_____

e. Domain_____

Range_____

7. $y = \frac{1}{3}\sqrt[3]{x-7} + 6$

a. Basic shape_____

b. Flatter Steeper Same
(circle one)

c. Horizontal Shift_____

d. Vertical Shift_____

e. Domain_____

Range_____