

Review Lessons 6.1 – 6.4 Worksheet

Name: _____

Evaluate the expression without using a calculator.

1.) $36^{-1/2}$

2.) $64^{5/6}$

3.) $(\sqrt[3]{216})^{-2}$

4.) $(\sqrt[5]{-32})^4$

Solve the equation. Round your answer to two decimal places when necessary.

5.) $x^4 = 20$

6.) $x^5 = -10$

7.) $x^6 + 5 = 26$

8.) $(x + 3)^3 = -16$

Simplify the expression. Assume all variables are positive.

5.) $\left(\frac{16^{1/3}}{2^{1/3}}\right)^2$

6.) $(x^{3/2} \cdot x^3)^{1/3}$

7.) $\sqrt[3]{16x^7y^2} \cdot \sqrt[3]{6xy^5}$

8.) $2\sqrt[4]{1250} - 8\sqrt[4]{32}$

9.) $\frac{x}{\sqrt[5]{9x}}$

10.) $\frac{6xy^{3/4}}{3x^{1/2}y^{1/2}}$

Let $f(x) = 4x^{3/2}$, $g(x) = 2x^{1/3}$, and $h(x) = -6x^{1/2}$. Perform the indicated operation and state the domain.

11.) $f(x) \cdot h(x)$

12.) $\frac{h(x)}{f(x)}$

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

Let $f(x) = 2x + 2$, $g(x) = x^2$, and $h(x) = \frac{3}{x-2}$. Perform the indicated operation and state the domain.

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

15.) $h(x) - f(x)$

16.) $h(x) \cdot g(x)$

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

18.) $h(g(x))$

19.) $f(g(x))$

Find the inverse of the function.

20.) $f(x) = \frac{4}{3}x + 2$

21.) $f(x) = \frac{4x^4-1}{18}, x \geq 0$

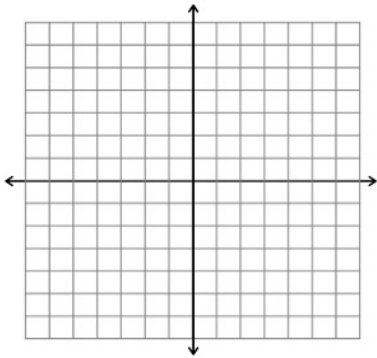
Verify that f and g are inverse functions.

22.) $f(x) = 2x - 4$, $g(x) = \frac{1}{2}x + 2$

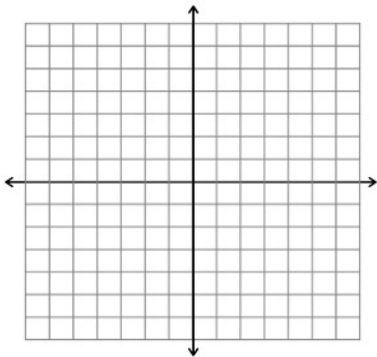
23.) $f(x) = 3x^2 + 1, x \geq 0$; $g(x) = \left(\frac{x-1}{3}\right)^{1/2}$

Graph the function f . Use the horizontal line test to determine whether the inverse of f is a function. Then graph the inverse of f .

24.) $f(x) = -x + 5$



25.) $f(x) = -|x + 2| + 2$



26.) $f(x) = \frac{1}{2}x^2 - 3, x \geq 0$

