

1. Evaluate the expression without using a calculator.

(a) $8^{7/3}$ (b) $9^{5/2}$ (c) $(-27)^{-2/3}$

2. Find the real solution(s) of the equation. Round your answer to the hundredth place (when appropriate).

(a) $x^5 + 17 = 35$ (b) $7x^3 = 189$ (c) $(x + 8)^4 = 16$

3. Simplify the expression.

(a) $(\frac{6^{1/5}}{6^{2/5}})^3$ (b) $\sqrt[4]{32} \cdot \sqrt[4]{8}$ (c) $\frac{1}{2-\sqrt[4]{9}}$

(d) $4\sqrt[5]{8} + 3\sqrt[5]{8}$ (e) $2\sqrt{48} - \sqrt{3}$ (f) $(5^{2/3} \cdot 2^{3/2})^{1/2}$

4. Simplify the expression. Assume all variables are positive.

(a) $\sqrt[3]{125z^9}$ (b) $\frac{2^{1/4}z^{5/4}}{6z}$ (c) $\sqrt{10z^5} - z^2\sqrt{40z}$

5. Describe the transformation of f represented by g . Then graph each function.

(a) $f(x) = \sqrt{x}, g(x) = -2\sqrt{x}$ (b) $f(x) = \sqrt{x}, g(x) = \sqrt{-x} - 6$

6. Let the graph of g be a reflection in the y -axis, followed by a translation 7 units to the right of the graph of $f(x) = \sqrt{x}$. Write a rule for g .

7. Solve the equation. Check your solution.

(a) $4\sqrt[3]{2x+1} = 20$ (b) $\sqrt{4x-4} = \sqrt{5x-1} - 1$ (c) $(6x)^{2/3} = 36$

8. Solve the inequality.

(a) $5\sqrt{x} + 2 > 17$ (b) $2\sqrt{x-8} < 24$ (c) $7\sqrt[3]{x-3} \geq 21$

9. Find the inverse of the function and label it $g(x)$. Then graph the function and its inverse.

(a) $f(x) = -\frac{1}{2}x + 10$ (b) $f(x) = x^2 + 8, x \geq 0$ (c) $f(x) = -x^3 - 9$