1. Write the expression $x^{5/8}$ in radical form.

2. Write the radical $\sqrt[5]{32x^3}$ using rational exponents.

Solve each equation

3. $\sqrt[3]{2x - 7} = -2$

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$\sqrt[8]{x^5}$

1. Write the expression $x^{5/8}$ in radical form.

2. Write the radical $\sqrt[5]{32x^3}$ using rational exponents.

$32^{1/5}x^{3/5}$

Solve each equation

3. $\left(\sqrt[3]{2x - 7}\right)^3 = (-2)^3$

$2x - 7 = -8$
$+7 \quad +7$
$2x = -1$

$x = -\frac{1}{2}$

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1. Find $(f+g)(x)$ for the following functions.

$f(x) = 6x^2 + 9x + 8$

$g(x) = 4x + 6$

2. Find $(f-g)(x)$ for the following functions.

$f(x) = -3x^3 + 12x^2 - 7$

$g(x) = 11x^2 + 17$

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3. Find $(f \cdot g)(x)$ for the following functions.

$f(x) = (x^2 - 9x - 11)$

$g(x) = (11x - 4)$

$(11x-4)(x^2-9x-11)$

$11x^3 - 99x^2 - 121x$
$\underline{- 4x^2 + 36x + 44}$

4. Find $\left(\frac{f}{g}\right)(x)$ for the following functions.

$f(x) = 12x^2 - 5x - 8$

$g(x) = 7x - 6$

$11x^3 - 103x^2 - 85x + 44$

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5. Find $[g \circ h](x)$ and $[h \circ g](x)$.

$g(x) = 7x$

$h(x) = (-5x^3 + 9x^2 - 2x + 2)$

$7(\quad)$

$+2 \quad -5(7x)^3 + 9(7x)^2 - 2(7x)$
$+2$

6. Find $[g \circ h](x)$ and $[h \circ g](x)$.

$g(x) = 3x$

$h(x) = -6x - 5$

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Find the inverse of the given relation.

7. $\{(1, -5), (12, -7), (9, -9), (16, -13)\}$

8. $\{(1, -3), (-4, 5), (4, -2)\}$

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Find the inverse of the given function.

9. $f(x) = \frac{7x-3}{16}$

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10. Determine whether each pair of functions are inverse functions.

1) $f(x) = \frac{11x+4}{4}$ 2) $f(x) = x - 8$

$g(x) = \frac{9x-6}{11}$ $g(x) = x + 8$

no yes

$(x+8)-8$

$x+\cancel{8}-\cancel{8}$

x

11. Determine whether each pair of functions are inverse functions.

1) $f(x) = 5x - 8$ 2) $f(x) = 11x + 4$

$g(x) = \frac{1}{5}(x+8)$ $g(x) = 11x - 4$

$\frac{\cancel{11}\left(\frac{9x-6}{\cancel{11}}\right)+4}{4}$

$\frac{9x-6+4}{4} = \frac{9x-2}{4}$

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12. Graph the given function. State its domain and range.

$y = -12\sqrt{5-6x} + 6$

window ymin -50

13. Graph the inequality $y < \sqrt{4x-9} + 8$.

window ymax 20

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Simplify.

14. $\sqrt{25x^{20}y^{14}}$

15. $\sqrt[4]{81a^{32}b^{20}}$

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16. Use a calculator to approximate the value of $\sqrt[4]{(954)^2}$ to three decimal places.

17. Simplify $\sqrt{72x^5y^{12}}$.

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Simplify.

18. $\sqrt{162} + \sqrt{32} - \sqrt{50}$

19. $(5+\sqrt{5})(7-\sqrt{2})$

$35 - 5\sqrt{2} + 7\sqrt{5} - \sqrt{10}$

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Write the given radical using rational exponents.

22. $\sqrt[3]{6a^5b^9}$

Solve the given equation.

24. $\sqrt{9x-9}+5=10$

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