Algebra 1

Chapter 7

Section 7-3

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Review: Evaluate the expressions with exponents

$6 \cdot 6 \cdot 6$

$36 \cdot 6$

216

10^4

$10 \cdot 10 \cdot 10 \cdot 10$

$10{,}000$

$x^4 \cdot x^4 \cdot x^4$

x^{12}

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Raising a Power to a Power

Words To raise a power to a power, multiply the exponents.

Algebra $(a^m)^n = a^{mn}$

$(x^4)^3 = x^{4 \cdot 3}$

$(x^4)^0 = x^0 = 1$

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Simplify the expressions using only positive exponents.

$(2^2)^3$

2^6

$(8^{-2})^{-2}$

8^4

$((5^2)^{-5})(5^8)$

$5^{-10} \cdot 5^8$

5^{-2}

$\frac{1}{5^2}$

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Simplify the expressions using only positive exponents.

$(g^2)^8$

g^{16}

$(p^{-2})^{-19}$

p^{38}

$((x^4)^{-6})^{10}$

$(x^{-24})^{10}$

x^{-240}

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Simplify each expression using only positive exponents

$(h^{\frac{1}{2}})^8$

$h^{\frac{1}{2}\cdot\frac{8}{1}}$

$h^{\frac{8}{2}}$

h^4

$(z^7)^{\frac{2}{5}}$

$z^{\frac{7}{1}\cdot\frac{2}{5}}$

$z^{\frac{14}{5}}$

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Simplify each expression using only positive exponents

$\left(x^{\frac{1}{2}}\right)^{\frac{4}{9}}$

$x^{\frac{1}{2}\cdot\frac{4}{9}}$

$x^{\frac{4}{18}}$

$x^{\frac{2}{9}}$

$\left(z^{\frac{5}{2}}\right)^{\frac{4}{5}}$

$z^{\frac{20}{10}}$

z^{2}

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Simplify the expressions using only positive exponents.

$(7x^5)^2$

7^2x^{10}

$49x^{10}$

$(2y^2)^7$

2^7y^{14}

$128y^{14}$

$x^{-8}(x^3)^{-3}$

$x^{-8}\cdot x^{-9}$

x^{-17}

$\frac{1}{x^{17}}$

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Simplify each expression using only positive exponents

$(9x^{\frac{3}{2}})^{\frac{1}{2}}$

$9^{\frac{1}{2}} x^{\frac{3}{2}\cdot\frac{1}{2}}$

$3x^{\frac{3}{4}}$

$(16z^{\frac{8}{9}})^{\frac{3}{4}}(4x^{\frac{7}{2}})^{\frac{3}{2}}$

$16^{\frac{3}{4}} z^{\frac{8}{9}\cdot\frac{3}{4}} \cdot 4^{\frac{3}{2}} x^{\frac{7}{2}\cdot\frac{3}{2}}$

$2^3 z^{\frac{6}{9}} 2^3 x^{\frac{21}{4}}$

$8 z^{2/3} \cdot 8 x^{\frac{21}{4}}$

$64 z^{2/3} x^{21/4}$

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