Exponent Rules Mixed Review

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Practice 5D: Chapter 12

Write each expression below as an integer raised to a power.

$9^3 \cdot 7^3 =$ _____

$3^8 \div 3^2 =$ _____

$\frac{8^3}{4^3} =$ _____

$6^7 \cdot 2^7 =$ _____

$19^8 \cdot 19^2 =$ _____

$\frac{2^8}{2^5} =$ _____

$18^{11} \div 9^{11} =$ _____

$(3^5)^7 =$ _____

$\frac{1}{12^3} =$ _____

$21^3 \div 21^5 =$ _____

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Write each expression below as an integer raised to a power.

$7^3 \div 7^{-5} =$ _____

$5^{-4} \cdot 5^9 =$ _____

$\frac{6^{18}}{6^{11}} =$ _____

$23^5 \cdot 23^9 =$ _____

$\frac{1}{15^8} =$ _____

$24^5 \div 8^5 =$ _____

$9^{-7} \cdot 5^{-7} =$ _____

$\frac{9^8}{3^8} = \left(\frac{9}{3}\right)^8 =$ _____

$\frac{3^{-4}}{3^3} =$ _____

$(7^9)^{-11} =$ _____

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Write each expression below as an integer raised to a power.

$30^{4} \cdot 30^{-14} =$ _____

$\frac{6^{-7}}{2^{-7}} =$ _____

$8^{3} \cdot 11^{3} =$ _____

$55^{5} \cdot 55^{9} =$ _____

$\frac{6^{5}}{6^{-8}} =$ _____

$(15^{-2})^{-22} =$ _____

$11^{12} \div 11^{-12} =$ _____

$\frac{1}{7^{41}} =$ _____

$17^{-3} \cdot 17^{-6} =$ _____

$36^{16} \div 2^{16} =$ _____

Exponent Rules Review Key

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Practice 5D: Chapter 12

$9^3 \cdot 7^3 = (9 \cdot 7)^3 = \mathbf{63^3}$

$3^8 \div 3^2 = 3^{8-2} = \mathbf{3^6}$

$\frac{8^3}{4^3} = \left(\frac{8}{4}\right)^3 = \mathbf{2^3}$

$6^7 \cdot 2^7 = (6 \cdot 2)^7 = \mathbf{12^7}$

$19^8 \cdot 19^2 = 19^{8+2} = \mathbf{19^{10}}$

$\frac{2^8}{2^5} = 2^{8-5} = \mathbf{2^3}$

$18^{11} \div 9^{11} = (18 \div 9)^{11} = \mathbf{2^{11}}$

$(3^5)^7 = 3^{5 \cdot 7} = \mathbf{3^{35}}$

$\frac{1}{12^3} = \mathbf{12^{-3}}$

$21^3 \div 21^5 = 2^{3-5} = \mathbf{21^{-2}}$

$7^3 \div 7^{-5} = 7^{3-(-5)} = \mathbf{7^8}$

$5^{-4} \cdot 5^9 = 5^{-4+9} = \mathbf{5^5}$

$\frac{6^{18}}{6^{11}} = 6^{18-11} = \mathbf{6^7}$

$23^5 \cdot 23^9 = 23^{5+9} = \mathbf{23^{14}}$

$\frac{1}{15^8} = \mathbf{15^{-8}}$

$24^5 \div 8^5 = (24 \div 8)^5 = \mathbf{3^5}$

$9^{-7} \cdot 5^{-7} = (9 \cdot 5)^{-7} = \mathbf{45^{-7}}$

$\frac{9^8}{3^8} = \left(\frac{9}{3}\right)^8 = \mathbf{3^8}$

$\frac{3^{-4}}{3^3} = 33^{-4-3} = \mathbf{3^{-7}}$

$(7^9)^{-11} = 7^{9 \cdot (-11)} = \mathbf{7^{-99}}$

$30^4 \cdot 30^{-14} = 30^{4+(-14)} = \mathbf{30^{-10}}$

$\frac{6^{-7}}{2^{-7}} = \left(\frac{6}{2}\right)^{-7} = \mathbf{3^{-7}}$

$8^3 \cdot 11^3 = (8 \cdot 11)^3 = \mathbf{88^3}$

$55^5 \cdot 55^9 = 33^{5+9} = \mathbf{55^{14}}$

$\frac{6^5}{6^{-8}} = 6^{5-(-8)} = \mathbf{6^{13}}$

$(15^{-2})^{-22} = 15^{(-2) \cdot (-22)} = \mathbf{15^{44}}$

$11^{12} \div 11^{-12} = 11^{12-(-12)} = \mathbf{11^{24}}$

$\frac{1}{7^{41}} = \mathbf{7^{-41}}$

$17^{-3} \cdot 17^{-6} = 17^{-3+(-6)} = \mathbf{17^{-9}}$

$36^{16} \div 2^{16} = (36 \div 2)^{16} = \mathbf{18^{16}}$