U3D1 Practice KEY

Sunday, January 31, 2021 11:59 AM

U3D1 Practice #1

Kuta Software - Infinite Algebra 1 Name_____

Properties of Exponents

Date_____ Period____

Simplify. Your answer should contain only positive exponents.

1) $2m^2 \cdot 2m^3$

$4m^{2+3} = 4m^5$

2) $m^4 \cdot 2m^{-3}$

$2m^{4+-3} = 2m$

3) $4r^{-3} \cdot 2r^2$

$8r^{-3+2} = 8r^{-1} = \frac{8}{r^1} = \frac{8}{r}$

4) $4n^4 \cdot 2n^{-3}$

$8n^{4+-3} = 8n^1 = 8n$

5) $2k^4 \cdot 4k^1$

$8k^{4+1} = 8k^5$

6) $2x^3y^{-3} \cdot 2x^{-1}y^3$

$4x^{3+-1}y^{-3+3} = 4x^2y^0 = 4x^2$

7) $2y^2 \cdot 3x$

$6xy^2$

8) $4v^3 \cdot vu^2$

$4v^{3+1}u^2 = 4v^4u^2$

27) $\frac{4x^1y^{-2}z^3}{4x}$

$\frac{y^{-2}z^3}{x} = \frac{z^3}{y^2x}$

28) $\frac{2h^3j^{-3}k^4}{3jk}$

$\frac{2}{3}h^3j^{-3-1}k^{4-1} = \frac{2}{3}h^3j^{-4}k^3 = \frac{2h^3k^3}{3j^4}$

29) $\frac{4m^4n^3p^3}{3m^2n^2p^4}$

$\frac{4}{3}m^{4-2}n^{3-2}p^{3-4} = \frac{4m^2n^1p^{-1}}{3} = \frac{4m^2n}{3p}$

30) $\frac{3x^3y^{-1}z^{-1}}{x^{-4}y^1z^1}$

$3x^{3-4}y^{-1}z^{-1} = 3x^7y^{-1}z^{-1} = \frac{3x^7}{yz}$

3) $2^{\frac{5}{3}}$

$= \sqrt[3]{2^5}$

4) $7^{\frac{4}{3}}$

$= \sqrt[3]{7^4}$

$= \sqrt[3]{2^5}$ $= \sqrt[3]{7^4}$

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Exponents and Logarithms

Date_____ Period____

Rewrite each equation in exponential form.

1) $\log_{11} 121 = 2$ $11^2 = 121$

2) $\log_{9} 81 = 2$ $9^2 = 81$

3) $\log_{7} 49 = 2$ $7^2 = 49$

4) $\log_{216} 6 = \frac{1}{3}$ $216^{1/3} = 6$

Rewrite each equation in logarithmic form.

5) $81^{\frac{1}{2}} = 9$ $\log_{81} 9 = 1/2$

6) $16^2 = 256$ $\log_{16} 256 = 2$

7) $7^2 = 49$ $\log_7 49 = 2$

8) $12^2 = 144$ $\log_{12} 144 = 2$

Rewrite each equation in exponential form.

9) $\log_x 191 = y$ $x^y = 191$

10) $\log_5 n = -2$ $5^{-2} = n$

11) $\log_5 x = 19$ $5^{19} = x$

12) $\log_n m = -6$ $n^{-6} = m$

Rewrite each equation in logarithmic form.

13) $x^y = 178$ $\log_x 178 = y$

14) $19^{-19} = x$ $\log_{19} x = -19$

$\log_x 178 = 4$

$\log_{19} x = -19$

15) $x^y = z$

$\log_x z = y$

16) $b^y = 154$

$\log_b 154 = a$