

Exponents - Power of a Quotient Rule

A) Use the power of a quotient rule to rewrite each expression as a single exponent.

1) $\frac{(8t)^{-1}}{(16u)^{-1}}$

2) $\frac{(-10)^{16}}{(-5)^{16}}$

3) $(2v)^{-18} \div \left(-\frac{v}{w}\right)^{-18}$

4) $\left(-\frac{q}{6r}\right)^{-20} \div \left(\frac{1}{4r}\right)^{-20}$

5) $\left(\frac{7a}{b}\right)^{10} \div (28a)^{10}$

6) $\frac{(4.2)^{-7}}{(-1.4)^{-7}}$

B) Find the value of x .

1) $\frac{(-x)^{13}}{9^{13}} = (0.6)^{13}$

$x =$ _____

4) $\frac{(16r)^5}{x^5} = \left(\frac{4r}{3s}\right)^5$

$x =$ _____

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$\frac{(-6z)^x}{(3z)^{-12}} = (-2)^{-12}$

$x =$ _____

$\frac{(-x)^{-8}}{(1.1)^{-8}} = (-9)^{-8}$

$x =$ _____

C) 1) Find the value of x , if $\frac{(4c)^2}{(-x)^2} = \left(\frac{c}{5d}\right)^2$.

i) $-20d$

ii) $9d$

iii) $9c$

iv) $-20c$

2) Which of the following equals $\left(-\frac{8m}{n}\right)^{-3} \div \left(-\frac{4}{7n}\right)^{-3}$?

i) $(14n)^{-3}$

ii) $(-14n)^{-3}$

iii) $(14m)^{-3}$

iv) $(-14m)^{-3}$

Exponents - Power of a Quotient Rule

A) Use the power of a quotient rule to rewrite each expression as a single exponent.

1) $\frac{(8t)^{-1}}{(16u)^{-1}}$

$\frac{\left(\frac{t}{2u}\right)^{-1}}$

2) $\frac{(-10)^{16}}{(-5)^{16}}$

2^{16}

3) $(2v)^{-18} \div \left(-\frac{v}{w}\right)^{-18}$

$\frac{(-2w)^{-18}}$

4) $\left(-\frac{q}{6r}\right)^{-20} \div \left(\frac{1}{4r}\right)^{-20}$

$\frac{\left(-\frac{2q}{3}\right)^{-20}}$

5) $\left(\frac{7a}{b}\right)^{10} \div (28a)^{10}$

$\frac{(-3)^{-7}}$

6) $\frac{(4.2)^{-7}}{(-1.4)^{-7}}$

B) Find the value of x .

1) $\frac{(-x)^{13}}{9^{13}} = (0.6)^{13}$

$x = \underline{-5.4}$

4) $\frac{(16r)^5}{x^5} = \left(\frac{4r}{3s}\right)^5$

$x = \underline{12s}$

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$\frac{(-6z)^x}{(3z)^{-12}} = (-2)^{-12}$

$x = \underline{-12}$

$\frac{(-x)^{-8}}{(1.1)^{-8}} = (-9)^{-8}$

$x = \underline{9.9}$

C) 1) Find the value of x , if $\frac{(4c)^2}{(-x)^2} = \left(\frac{c}{5d}\right)^2$.

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