

Exponents - Power of a Quotient Rule

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

1) $\frac{10^{-5}}{5^{-5}}$

2) $\left(\frac{1}{4}\right)^{-7} \div (-2)^{-7}$

3) $\frac{(-15)^{12}}{3^{12}}$

4) $\left(-\frac{6}{5}\right)^{10} \div \left(-\frac{3}{2}\right)^{10}$

5) $\frac{(-1.5)^{-3}}{(2.5)^{-3}}$

6) $\frac{(5.6)^{-14}}{4^{-14}}$

B) Find the value of x .

1) $\frac{16^9}{8^x} = 2^9$

$x =$ _____

4) $\frac{(4.5)^{-11}}{(-x)^{-11}} = (1.5)^{-11}$

$x =$ _____

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$(-x)^{13} \div \left(\frac{6}{7}\right)^{13} = 14^{13}$

$x =$ _____

$\frac{(-9.6)^{-4}}{x^{-4}} = -3^{-4}$

$x =$ _____

C) 1) Find the value of x , if $(-x)^{-8} \div \left(\frac{7}{8}\right)^{-8} = \left(\frac{2}{7}\right)^{-8}$.

i) $\frac{1}{4}$

ii) $-\frac{1}{8}$

iii) $-\frac{1}{4}$

iv) $\frac{1}{7}$

2) Which of the following equals $\frac{(-18)^{15}}{(2)^{15}}$?

i) $(-9)^{15}$

ii) $(-6)^{15}$

iii) 9^{15}

iv) 7^{15}