

Exponents - Quotient Rule

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

1) $\frac{(9.3)^8}{(9.3)^3}$

2) $\left(\frac{5}{7}\right)^{-9} \div \left(\frac{5}{7}\right)^4$

3) $\frac{(-18)^{-12}}{(-18)^{-6}}$

4) $\frac{(-4)^{-6}}{(-4)^{13}}$

5) $\frac{11^{17}}{11^{15}}$

6) $\left(-\frac{3}{4}\right)^7 \div \left(-\frac{3}{4}\right)^{-11}$

B) Find the value of x .

1) $\frac{(-13)^{-4}}{(-13)^x} = (-13)^{-20}$

$x =$ _____

4) $\left(\frac{1}{6}\right)^{-x} \div \left(\frac{1}{6}\right)^5 = \left(\frac{1}{6}\right)^{15}$

$x =$ _____

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$\frac{9^{-x}}{9^7} = 9^{-19}$

$x =$ _____

$\frac{(4.7)^x}{(4.7)^{13}} = (4.7)^{-13}$

$x =$ _____

C) 1) Which of the following equals $\frac{(-3.5)^{-8}}{(-3.5)^{-7}}$?

i) $(-3.5)^{-1}$

ii) $(-7)^{-15}$

iii) -3.5

iv) $(-7)^{-1}$

2) Find the value of x , if $\left(-\frac{7}{2}\right)^{14} \div x^{-4} = \left(-\frac{7}{2}\right)^{18}$.

i) 7

ii) $\frac{7}{2}$

iii) $-\frac{7}{2}$

iv) -7

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

1) $\frac{(9.3)^8}{(9.3)^3}$

$(9.3)^5$

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$\left(\frac{5}{7}\right)^{-13}$

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6) $\left(-\frac{3}{4}\right)^7 \div \left(-\frac{3}{4}\right)^{-11}$

$\left(-\frac{3}{4}\right)^{18}$

B) Find the value of x .

1) $\frac{(-13)^{-4}}{(-13)^x} = (-13)^{-20}$

$x =$ 16

4) $\left(\frac{1}{6}\right)^{-x} \div \left(\frac{1}{6}\right)^5 = \left(\frac{1}{6}\right)^{15}$

$x =$ -20

$\frac{9^{-x}}{9^7} = 9^{-19}$

$x =$ 12

$\frac{(4.7)^x}{(4.7)^{13}} = (4.7)^{-13}$

$x =$ 0

C) 1) Which of the following equals $\frac{(-3.5)^{-8}}{(-3.5)^{-7}}$?

i) $(-3.5)^{-1}$

ii) $(-7)^{-15}$

iii) -3.5

iv) $(-7)^{-1}$

2) Find the value of x , if $\left(-\frac{7}{2}\right)^{14} \div x^{-4} = \left(-\frac{7}{2}\right)^{18}$.

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