

## Exponents - Power of a Quotient Rule

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

1)  $\left(\frac{5p}{9q}\right)^{15} \div \left(\frac{1}{3q}\right)^{15}$

2)  $(-10w)^{-17} \div \left(-\frac{2w}{7y}\right)^{-17}$

3)  $\frac{(7.5)^9}{(-1.5)^9}$

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\_\_\_\_\_

4)  $\frac{(-18r)^8}{(-6r)^8}$

5)  $\frac{(-14)^{-6}}{2^{-6}}$

6)  $\left(\frac{6}{5c}\right)^{14} \div (-3)^{14}$

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B) Find the value of  $x$ .

1)  $\frac{(-x)^{-1}}{(-3v)^{-1}} = \left(\frac{3u}{v}\right)^{-1}$

$x =$  \_\_\_\_\_

4)  $\frac{(-6.2)^7}{(3.1)^{-x}} = (-2)^7$

$x =$  \_\_\_\_\_

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$\frac{x^{20}}{(-7)^{20}} = \left(-\frac{2}{t}\right)^{20}$

$x =$  \_\_\_\_\_

$\left(\frac{a}{6b}\right)^{-18} \div (-x)^{-18} = \left(\frac{a}{4}\right)^{-18}$

$x =$  \_\_\_\_\_

C) 1) Which of the following equals  $\left(\frac{4}{z}\right)^{-19} \div 2^{-19}$  ?

i)  $\left(\frac{z}{2}\right)^{-19}$

ii)  $\left(\frac{2}{z}\right)^{-19}$

iii)  $\left(-\frac{z}{2}\right)^{-19}$

iv)  $\left(-\frac{2}{z}\right)^{-19}$

2) Find the value of  $x$ , if  $\frac{(-x)^4}{5^4} = (-3)^4$ .

i) -8

ii) -15

iii) 8

iv) 15

**Exponents - Power of a Quotient Rule**

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

1)  $\left(\frac{5p}{9q}\right)^{15} \div \left(\frac{1}{3q}\right)^{15}$

2)  $(-10w)^{-17} \div \left(-\frac{2w}{7y}\right)^{-17}$

3)  $\frac{(7.5)^9}{(-1.5)^9}$

$\frac{(5p)^{15}}{3}$

$(35y)^{-17}$

$(-5)^9$

4)  $\frac{(-18r)^8}{(-6r)^8}$

5)  $\frac{(-14)^{-6}}{2^{-6}}$

6)  $\left(\frac{6}{5c}\right)^{14} \div (-3)^{14}$

$3^8$

$\left(-\frac{2}{5c}\right)^{14}$

B) Find the value of  $x$ .

1)  $\frac{(-x)^{-1}}{(-3v)^{-1}} = \left(\frac{3u}{v}\right)^{-1}$

$x = 9u$

4)  $\frac{(-6.2)^7}{(3.1)^{-x}} = (-2)^7$

$x = -7$

**PREVIEW**

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$\frac{x^{20}}{(-7)^{20}} = \left(-\frac{2}{t}\right)^{20}$

$x = \frac{14}{t}$

$\left(\frac{a}{6b}\right)^{-18} \div (-x)^{-18} = \left(\frac{a}{4}\right)^{-18}$

$x = -\frac{2}{3b}$

C) 1) Which of the following equals  $\left(\frac{4}{z}\right)^{-19} \div 2^{-19}$  ?

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