

Exponents - Quotient Rule

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

1) $\frac{7^{11}}{7^{-4}}$

2) $\frac{(-20)^{-15}}{(-20)^{-13}}$

3) $\left(-\frac{1}{2}\right)^{11} \div \left(-\frac{1}{2}\right)^5$

4) $\frac{(-4.1)^6}{(-4.1)}$

5) $\left(\frac{3}{5}\right)^{-7} \div \left(\frac{3}{5}\right)^2$

6) $\frac{16^{-4}}{16^{19}}$

B) Find the value of x .

1) $(-x)^{13} \div \left(\frac{5}{4}\right)^{-3} = \left(\frac{5}{4}\right)^{16}$

$x =$ _____

4) $\frac{(-11)^x}{(-11)^{-8}} = (-11)^{-10}$

$x =$ _____

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$\frac{(-5.6)^x}{(-5.6)^{11}} = (-5.6)^{-7}$

$x =$ _____

$\frac{15^8}{15^{-x}} = 15^3$

$x =$ _____

C) 1) Find the value of x , if $\left(\frac{6}{7}\right)^x \div \left(\frac{6}{7}\right)^0 = \left(\frac{6}{7}\right)^{15}$.

i) -15

ii) 0

iii) -18

iv) 15

2) Which of the following equals $\frac{13^{-16}}{13^{-5}}$?

i) 13^{-21}

ii) 13^{-11}

iii) 13^{11}

iv) 13^{21}

Exponents - Quotient Rule

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

1) $\frac{7^{11}}{7^{-4}}$

7¹⁵

2) $\frac{(-20)^{-15}}{(-20)^{-13}}$

(-20)⁻²

3) $\left(-\frac{1}{2}\right)^{11} \div \left(-\frac{1}{2}\right)^5$

$\left(-\frac{1}{2}\right)^6$

4) $\frac{(-4.1)^6}{(-4.1)}$

(-4.1)⁵

5) $\left(\frac{3}{5}\right)^{-7} \div \left(\frac{3}{5}\right)^2$

16⁻²³

6) $\frac{16^{-4}}{16^{19}}$

B) Find the value of x .

1) $(-x)^{13} \div \left(\frac{5}{4}\right)^{-3} = \left(\frac{5}{4}\right)^{16}$

$x =$ **$-\frac{5}{4}$**

4) $\frac{(-11)^x}{(-11)^{-8}} = (-11)^{-10}$

$x =$ **-18**

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$\frac{(-5.6)^x}{(-5.6)^{11}} = (-5.6)^{-7}$

$x =$ **4**

$\frac{15^8}{15^{-x}} = 15^3$

$x =$ **-5**

C) 1) Find the value of x , if $\left(\frac{6}{7}\right)^x \div \left(\frac{6}{7}\right)^0 = \left(\frac{6}{7}\right)^{15}$.

i) -15

ii) 0

iii) -18

iv) 15

2) Which of the following equals $\frac{13^{-16}}{13^{-5}}$?

i) 13^{-21}

ii) 13^{-11}

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