Name : _____

T2S3

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

_____ _____ _____

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

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

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

_____ _____

B) Find the value of x.

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

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

x = _____

x = _____

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

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

x = _____

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