Name : _____

T2S1

Exponents - Power of a Quotient Rule

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

1) $\dfrac{(-20)^{-4}}{2^{-4}}$

2) $\dfrac{(-p)^5}{(-q)^5}$

3) $\left(\dfrac{r}{9s}\right)^{12} \div \left(-\dfrac{r}{3t}\right)^{12}$

4) $\left(-\dfrac{4b}{c}\right)^{-13} \div b^{-13}$

5) $\dfrac{(-6.6)^3}{(-1.1)^3}$

6) $(16u)^{-2} \div \left(\dfrac{2u}{5v}\right)^{-2}$

B) Find the value of x.

1) $\dfrac{12^{11}}{(-3)^x} = (-4)^{11}$

x = _____

$-x)^{15} \div \left(\dfrac{n}{w}\right)^{15} = \left(\dfrac{m}{n}\right)^{15}$

x = _____

4) $\left(-\dfrac{7d}{3c}\right)^{-9} \div x^{-9} = \left(-\dfrac{1}{6c}\right)$

x = _____

$\dfrac{(8.4)^{14}}{x^{14}} = 7^{14}$

x = _____

C) 1) Find the value of x, if $x^{-8} \div \left(\dfrac{5a}{3b}\right)^{-8} = (6b)^{-8}$.

i) $-10a$ ii) $5a$ iii) $10a$ iv) $-5a$

2) Which of the following equals $\dfrac{(-18y)^{20}}{(9z)^{20}}$?

i) $\left(-\dfrac{2y}{z}\right)^{20}$ ii) $\left(\dfrac{y}{2z}\right)^{20}$ iii) $\left(-\dfrac{2z}{y}\right)^{20}$ iv) $\left(\dfrac{z}{2y}\right)^{20}$