Name : _____

T1S3

Exponents - Power of a Quotient Rule

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

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

2) $\dfrac{(-9)^{-13}}{(7.5)^{-13}}$

3) $\left(\dfrac{5}{9}\right)^{-3} \div \left(\dfrac{2}{3}\right)^{-3}$

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4) $\dfrac{4^{-14}}{6^{-14}}$

5) $\dfrac{(8.4)^8}{(-4.2)^8}$

6) $(-6)^{-19} \div \left(-\dfrac{3}{5}\right)^{-19}$

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B) Find the value of x.

1) $\dfrac{(-x)^{-16}}{2^{-16}} = \left(-\dfrac{2}{5}\right)^{-16}$

x = _____

$\dfrac{(-9)^2}{x^2} = (-15)^2$

x = _____

4) $\dfrac{(8.4)^x}{(3.5)^{-1}} = (2.4)^{-1}$

x = _____

$\dfrac{(4.9)^{-20}}{(-x)^{-20}} = (0.7)^{-20}$

x = _____

C) 1) Which of the following equals $\left(\dfrac{8}{5}\right)^7 \div (-4)^7$?

i) $\left(-\dfrac{2}{5}\right)^7$

ii) $\left(-\dfrac{4}{5}\right)^7$

iii) $\left(\dfrac{4}{5}\right)^7$

iv) $\left(\dfrac{2}{5}\right)^7$

2) Find the value of x, if $\dfrac{(5.5)^{-10}}{(-x)^{-10}} = (-0.5)^{-10}$.

i) −11

ii) 5

iii) 11

iv) −6