Name : _____

T2S1

Exponents - Power of a Product Rule

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

1) $\left(-\frac{p}{4q}\right)^9 \cdot \left(-\frac{8q}{r}\right)^9$

2) $(-a)^{-13} \cdot b^{-13}$

3) $(-8)^4 \cdot (-6)^4$

_____ _____ _____

4) $(-3.8)^{-17} \cdot (2.5)^{-17}$

5) $\left(\frac{u}{v}\right)^5 \cdot (-v)^5$

6) $c^{-8} \cdot (5d)^{-8}$

_____ _____

B) Find the value of x.

1) $(-7)^{-12} \cdot x^{-12} = 63^{-12}$

$(-x)^{-3} \cdot k^{-3} = (-mk)^{-3}$

x = _____

x = _____

4) $(-x)^{-6} \cdot \left(\frac{m}{3n}\right)^{-6} = (2m)$

$-4.6)^x \cdot 5^{19} = (-23)^{19}$

x = _____

x = _____

C) 1) Find the value of x, if $x^{-2} \cdot (-6y)^{-2} = (6yz)^{-2}$.

i) z ii) $-z$ iii) $-6y$ iv) $-y$

2) Which of the following equals $8^{14} \cdot (-9)^{14}$?

i) 72^{28} ii) $(-17)^{-14}$ iii) $(-72)^{14}$ iv) 17^{18}