

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

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\_\_\_\_\_

B) Find the value of  $x$ .

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

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

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

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)  $17^{18}$

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$\frac{(2p)^9}{r}$

$\frac{(-ab)^{-13}}{}$

$\frac{48^4}{}$

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

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

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

$\frac{(-9.5)^{-17}}{}$

$\frac{(5cd)^{-8}}{}$

B) Find the value of  $x$ .

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$x = \underline{-9}$

$x = \underline{m}$

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