

Name : \_\_\_\_\_

T2S1

## Exponents - Product Rule

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

1)  $k^{-1} \cdot k^6$

2)  $(-4)^{11} \cdot (-4)^{-7}$

3)  $\left(\frac{c}{d}\right)^9 \cdot \left(\frac{c}{d}\right)^0$

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4)  $a^{-3} \cdot a^{-5}$

5)  $(0.5)^{-18} \cdot (0.5)^{15}$

6)  $(-t)^{-12} \cdot (-t)^2$

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B) Find the value of  $x$ .

1)  $(-12)^{-1} \cdot (-12)^x = (-12)^{15}$

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$\left(-\frac{7}{p}\right)^{-10} \cdot \left(-\frac{7}{p}\right)^{-x} = \left(-\frac{7}{p}\right)^{15}$

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

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

4)  $m^9 \cdot m^{-x} = m^{-19}$

$(-2.3)^x \cdot (-2.3)^{-14} = (-2.3)^{17}$

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

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

C) 1) Which of the following equals  $3^7 \cdot 3^{-13}$ ?

i)  $3^{-6}$

ii)  $3^6$

iii)  $-3^{-6}$

iv)  $-3^{20}$

2) Find the value of  $x$ , if  $(-q)^5 \cdot (-q)^x = (-q)^{10}$ .

i) 10

ii) 5

iii) -10

iv) 15

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