

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

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

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

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

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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Exponents - Product Rule

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

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

 k^5

 $(-4)^4$

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

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

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

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

 a^{-8}

 $(-t)^{-10}$

B) Find the value of x .

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

$x =$ -15

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

$x =$ 28

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

$x =$ -25

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

$x =$ 31

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