

## Exponents - Power of a Product Rule

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

1)  $9^7 \cdot 11^7$

2)  $\left(-\frac{6a}{b}\right)^{-10} \cdot \left(\frac{b}{c}\right)^{-10}$

3)  $(-k)^{-6} \cdot (-d)^{-6}$

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4)  $p^4 \cdot (-3q)^4$

5)  $(1.2)^{-9} \cdot (-6)^{-9}$

6)  $m^{12} \cdot \left(\frac{n}{m}\right)^{12}$

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B) Find the value of  $x$ .

1)  $x^{-17} \cdot \left(\frac{c}{d}\right)^{-17} = c^{-17}$

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

4)  $(-x)^3 \cdot (-8)^3 = (9.6)^3$

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

# PREVIEW

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4)  $y^{19} \cdot (-x)^{19} = (8yz)^{19}$

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

$c^{-6} \cdot (-r)^{-6} = (-sr)^{-6}$

$r =$  \_\_\_\_\_

C) 1) Which of the following equals  $\left(\frac{n}{p}\right)^2 \cdot \left(-\frac{p}{q}\right)^2$ ?

i)  $\left(\frac{n}{q}\right)^2$

ii)  $\left(\frac{n}{q}\right)^4$

iii)  $\left(-\frac{n}{q}\right)^2$

iv)  $\left(-\frac{n}{q}\right)^4$

2) Find the value of  $x$ , if  $x^{-4} \cdot (-5)^{-4} = 25^{-4}$ .

i) -5

ii) -15

iii) -10

iv) 5