

Exponents - Power of a Product Rule

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

1) $(-u)^{-6} \cdot t^{-6}$

2) $9^9 \cdot (1.8)^9$

3) $d^{-11} \cdot \left(-\frac{7c}{d}\right)^{-11}$

4) $\left(\frac{m}{k}\right)^7 \cdot \left(\frac{k}{n}\right)^7$

5) $(-y)^3 \cdot (-8z)^3$

6) $(-6)^{-17} \cdot 6^{-17}$

B) Find the value of x .

1) $(-4)^{-x} \cdot (-3)^{-19} = 12^{-19}$

$x =$ _____

4) $x^{-8} \cdot (-p)^{-8} = (-pq)^{-8}$

$x =$ _____

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$\left(\frac{8v}{w}\right)^2 \cdot x^2 = \left(-\frac{4v}{y}\right)^2$

$x =$ _____

$\left(\frac{u}{s}\right)^{-17} \cdot (-x)^{-17} = (-u)^{-17}$

$x =$ _____

C) 1) Find the value of x , if $x^{-5} \cdot 10^{-5} = 70^{-5}$.

i) 7

ii) -5

iii) -7

iv) 10

2) Which of the following equals $\left(\frac{r}{s}\right)^6 \cdot (-12s)^6$?

i) $\left(\frac{s}{r}\right)^6$

ii) $(-12r)^{12}$

iii) $\left(\frac{r}{s}\right)^{12}$

iv) $(-12r)^6$

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$(-tu)^{-6}$

$(16.2)^9$

$(-7c)^{-11}$

4) $\left(\frac{m}{k}\right)^7 \cdot \left(\frac{k}{n}\right)^7$

5) $(-y)^3 \cdot (-8z)^3$

6) $(-6)^{-17} \cdot 6^{-17}$

$\left(\frac{m}{n}\right)^7$

$(-36)^{-17}$

B) Find the value of x .

1) $(-4)^{-x} \cdot (-3)^{-19} = 12^{-19}$

$x =$ 19

4) $x^{-8} \cdot (-p)^{-8} = (-pq)^{-8}$

$x =$ q

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$\frac{8v}{w})^2 \cdot x^2 = \left(-\frac{4v}{y}\right)^2$

$x =$ $-\frac{w}{2y}$

$\frac{u}{s})^{-17} \cdot (-x)^{-17} = (-u)^{-17}$

$x =$ s

C) 1) Find the value of x , if $x^{-5} \cdot 10^{-5} = 70^{-5}$.

i) 7

ii) -5

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iv) 10

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