

Exponents - Product Rule

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

1) $(2.5)^9 \cdot (2.5)^{10}$

2) $(-12)^{-8} \cdot (-12)^{-5}$

3) $9^6 \cdot 9^{-17}$

4) $14^{-16} \cdot 14^{-4}$

5) $\left(\frac{5}{9}\right)^{19} \cdot \left(\frac{5}{9}\right)^{-9}$

6) $(-3.6)^3 \cdot (-3.6)^5$

B) Find the value of x .

1) $\left(-\frac{6}{5}\right)^5 \cdot \left(-\frac{6}{5}\right)^{-x} = \left(-\frac{6}{5}\right)^2$

$x =$ _____

4) $(-6.8)^x \cdot (-6.8)^0 = (-6.8)^{-2}$

$x =$ _____

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$c^5 \cdot 2^4 = 2^9$

$r =$ _____

$\left(\frac{1}{2}\right)^x \cdot \left(\frac{1}{2}\right)^8 = \left(\frac{1}{2}\right)^5$

$r =$ _____

C) 1) Find the value of x , if $4^x \cdot 4^7 = 4^{18}$.

i) 13

ii) -12

iii) 11

iv) 8

2) Which of the following equals $\left(\frac{2}{7}\right)^{17} \cdot \left(\frac{2}{7}\right)^{-10}$?

i) $\left(\frac{2}{7}\right)^7$

ii) $\left(\frac{2}{7}\right)^{-27}$

iii) $\left(\frac{2}{7}\right)^{27}$

iv) $\left(\frac{2}{7}\right)^{-7}$