

Name : _____

T153

Exponents - Product Rule

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

1) $\left(-\frac{2}{9}\right)^{12} \cdot \left(-\frac{2}{9}\right)^6$

2) $(-4.1)^3 \cdot (-4.1)^5$

3) $(-3)^{-8} \cdot (-3)^{-8}$

4) $6^{-7} \cdot 6^2$

5) $17^{-4} \cdot 17^{-11}$

6) $\left(\frac{1}{8}\right)^9 \cdot \left(\frac{1}{8}\right)^{-5}$

B) Find the value of x .

1) $(9.2)^{-x} \cdot (9.2)^7 = (9.2)^5$

$x =$ _____

4) $16^{10} \cdot x^4 = 16^{14}$

$x =$ _____

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$\left(\frac{7}{5}\right)^8 \cdot \left(\frac{7}{5}\right)^x = \left(\frac{7}{5}\right)^5$

$x =$ _____

$-8.7^{-18} \cdot (-8.7)^x = (-8.7)^{-8}$

$x =$ _____

C) 1) Which of the following equals $\left(\frac{1}{4}\right)^0 \cdot \left(\frac{1}{4}\right)^{-15}$?

i) $\left(\frac{1}{8}\right)^{-15}$

ii) $\left(\frac{1}{4}\right)^{-15}$

iii) $\left(\frac{1}{4}\right)^{15}$

iv) $\left(\frac{2}{4}\right)^{-15}$

2) Find the value of x , if $12^{-x} \cdot 12^3 = 12^{-17}$.

i) 14

ii) -16

iii) 20

iv) -18