Name : _____

Exponents - Product Rule

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

1) $(-5)^{-10} \cdot (-5)^{15}$

2) $\left(\dfrac{4}{5}\right)^{-6} \cdot \left(\dfrac{4}{5}\right)^{-9}$

3) $(1.4)^{-12} \cdot (1.4)^{5}$

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4) $\left(-\dfrac{7}{6}\right)^{9} \cdot \left(-\dfrac{7}{6}\right)^{3}$

5) $(-13)^{0} \cdot (-13)^{-19}$

6) $8^{-14} \cdot 8^{-4}$

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B) Find the value of x.

1) $10^{x} \cdot 10^{-9} = 10^{11}$

$-2.9)^{-13} \cdot (-2.9)^{x} = (-2.9)^{-5}$

$x =$ _____

$x =$ _____

4) $x^{7} \cdot (5.6)^{7} = (5.6)^{14}$

$11^{-x} \cdot 11^{6} = 11^{16}$

PREVIEW

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$x =$ _____

$x =$ _____

C) 1) Which of the following equals $(-19)^{-12} \cdot (-19)^{4}$?

i) $(-19)^{-8}$ ii) $(-19)^{8}$ iii) $(-19)^{17}$ iv) $(-19)^{16}$

2) Find the value of x, if $(-4.5)^{x} \cdot (-4.5)^{9} = (-4.5)^{11}$.

i) 20   ii) -5 iii) -3 iv) 2