

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

$c =$  \_\_\_\_\_

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

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

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

Name : \_\_\_\_\_

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$(2.5)^{19}$

$(-12)^{-13}$

$9^{-11}$

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

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

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

$14^{-20}$

$(-3.6)^8$

B) Find the value of  $x$ .

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

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

$x =$   $-7$

$x =$   $2$

4)  $(-6.8)^x \cdot (-6.8)^0 = (-6.8)^9$

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

$x =$   $9$

$x =$   $-3$

**PREVIEW**

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