

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

T1S3

## Exponents - Power of a Product Rule

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

1)  $(5.7)^4 \cdot (-3)^4$

2)  $(-4.8)^{12} \cdot (1.5)^{12}$

3)  $2^{-3} \cdot \left(-\frac{7}{8}\right)^{-3}$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4)  $(-8)^{15} \cdot (-12)^{15}$

5)  $\left(-\frac{8}{9}\right)^{-5} \cdot \left(\frac{3}{4}\right)^{-5}$

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

\_\_\_\_\_

\_\_\_\_\_

B) Find the value of  $x$ .

1)  $(-5.5)^7 \cdot (-1.4)^x = (7.7)^{14}$

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$(-x)^{-14} \cdot \left(\frac{1}{9}\right)^{-14} = 2^{-14}$

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

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

4)  $x^{-17} \cdot (-8)^{-17} = 48^{-17}$

$(-15)^3 \cdot (-x)^3 = 60^3$

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

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

C) 1) Which of the following equals  $7^{-4} \cdot 9^{-4}$ ?

i)  $63^{-4}$

ii)  $2^{-4}$

iii)  $16^{-4}$

iv)  $63^{-8}$

2) Find the value of  $x$ , if  $16^2 \cdot (-x)^2 = 4^2$ .

i) 4

ii)  $-\frac{1}{4}$

iii)  $\frac{1}{4}$

iv)  $-\frac{1}{2}$

**PREVIEW**

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**Exponents - Power of a Product Rule**

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

1)  $(5.7)^4 \cdot (-3)^4$

2)  $(-4.8)^{12} \cdot (1.5)^{12}$

3)  $2^{-3} \cdot \left(-\frac{7}{8}\right)^{-3}$

$(-17.1)^4$

$(-7.2)^{12}$

$\left(-\frac{7}{4}\right)^{-3}$

4)  $(-8)^{15} \cdot (-12)^{15}$

5)  $\left(-\frac{8}{9}\right)^{-5} \cdot \left(\frac{3}{4}\right)^{-5}$

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

$96^{15}$

**PREVIEW**

$84^{-8}$

B) Find the value of  $x$ .

1)  $(-5.5)^7 \cdot (-1.4)^x = (7.7)^7$

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$(-x)^{-14} \cdot \left(\frac{1}{9}\right)^{-14} = 2^{-14}$

$x =$   $7$

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$x =$   $-18$

4)  $x^{-17} \cdot (-8)^{-17} = 48^{-17}$

$(-15)^3 \cdot (-x)^3 = 60^3$

$x =$   $-6$

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$x =$   $4$

C) 1) Which of the following equals  $7^{-4} \cdot 9^{-4}$ ?

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i)  $4$

ii)  $-\frac{1}{4}$

iii)  $\frac{1}{4}$

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