

## Exponents - Power of a Product Rule

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

1)  $\left(-\frac{5}{3}\right)^{-12} \cdot \left(-\frac{1}{5}\right)^{-12}$

2)  $13^{-2} \cdot 6^{-2}$

3)  $(-15)^{18} \cdot (-10)^{18}$

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\_\_\_\_\_

\_\_\_\_\_

4)  $4^{-9} \cdot (3.4)^{-9}$

5)  $\left(\frac{9}{7}\right)^{11} \cdot (-7)^{11}$

6)  $(-5.6)^{-4} \cdot (-2.5)^{-4}$

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\_\_\_\_\_

B) Find the value of  $x$ .

1)  $(1.6)^{-5} \cdot (-x)^{-5} = (2.4)^{-5}$

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

4)  $\left(\frac{3}{5}\right)^{-7} \cdot (-x)^{-7} = (-3)^{-7}$

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

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$6^{-3} \cdot 7^{-3} = 56^{-3}$

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

$(-9)^{-x} \cdot 6^{15} = (-54)^{15}$

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

C) 1) Find the value of  $x$ , if  $(-6)^{-10} \cdot (-x)^{-10} = (-30)^{-10}$ .

i) -6

ii) 6

iii) 5

iv) -5

2) Which of the following equals  $(8.5)^6 \cdot (6.8)^6$ ?

i)  $(15.3)^6$

ii)  $(-57.8)^6$

iii)  $(57.8)^6$

iv)  $(-15.3)^6$

**Exponents - Power of a Product Rule**

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

1)  $\left(-\frac{5}{3}\right)^{-12} \cdot \left(-\frac{1}{5}\right)^{-12}$

2)  $13^{-2} \cdot 6^{-2}$

3)  $(-15)^{18} \cdot (-10)^{18}$

$\left(\frac{1}{3}\right)^{-12}$

$78^{-2}$

$150^{18}$

4)  $4^{-9} \cdot (3.4)^{-9}$

5)  $\left(\frac{9}{7}\right)^{11} \cdot (-7)^{11}$

6)  $(-5.6)^{-4} \cdot (-2.5)^{-4}$

$(13.6)^{-9}$

**PREVIEW**

$14^{-4}$

B) Find the value of  $x$ .

1)  $(1.6)^{-5} \cdot (-x)^{-5} = (2.4)^{-5}$

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$6^{-3} \cdot 7^{-3} = 56^{-3}$

$x = -1.5$

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$x = 8$

4)  $\left(\frac{3}{5}\right)^{-7} \cdot (-x)^{-7} = (-3)^{-7}$

$(-9)^{-x} \cdot 6^{15} = (-54)^{15}$

$x = 5$

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$x = -15$

C) 1) Find the value of  $x$ , if  $(-6)^{-10} \cdot (-x)^{-10} = (-30)^{-10}$ .

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ii) 6

iii) 5

iv) -5

2) Which of the following equals  $(8.5)^6 \cdot (6.8)^6$ ?

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