

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

# Exponents

Sheet 2

A) Use the laws of exponents to find the value of  $x$ .

1)  $x^4 \cdot 5^4 = (-10)^4$

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

2)  $\frac{20^{-17}}{20^x} = 20^{16}$

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

3)  $\left(\left(\frac{2}{3}\right)^3\right)^{-x} = \left(\frac{2}{3}\right)^{-9}$

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

4)  $(-3)^{-8} \cdot (-3)^{-x} = (-3)^{-8}$

5)  $(2.4)^{-5} \cdot x^{11} = (2.4)^6$

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

7)  $3^{-x} = 243$

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

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B) Use the laws of exponents to find the value of  $x$  and  $y$ .

1)  $6^{10} \div \left(\frac{2}{3}\right)^{-9} = 3^x \cdot 2^{-y}$

2)  $\frac{8^{-3} \cdot (-7)^{-7}}{(-56)^{-14}} = 8^{-x} \cdot y^7$

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**Exponents**

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1)  $x^4 \cdot 5^4 = (-10)^4$

2)  $\frac{20^{-17}}{20^x} = 20^{16}$

$x =$        **-2**      

$x =$        **-33**      

3)  $\left(\left(\frac{2}{3}\right)^3\right)^{-x} = \left(\frac{2}{3}\right)^{-9}$

4)  $(-3)^{-8} \cdot (-3)^{-x} = (-3)^{-8}$

$x =$        **3**      

5)  $(2.4)^{-5} \cdot x^{11} = (2.4)^6$

$x =$        **2.4**      

7)  $3^{-x} = 243$

$x =$        **-5**      

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       **$x = 1$  and  $y = -19$**       

       **$x = -11$  and  $y = -7$**