Name : _____

Exponents

Sheet 3

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

1) $\dfrac{(6.7)^{-17}}{(6.7)^{-x}} = (6.7)^{14}$

x = _____

2) $\dfrac{(-15)^{-18}}{x^{-7}} = (-15)^{-11}$

x = _____

3) $x^{-3} \cdot 4^{-3} = 20^{-3}$

x = _____

4) $((-12)^{-4})^{x} = (-12)^{16}$

x = _____

5) $625^{-8} = 25^{-x}$

x = _____

7) $\dfrac{(-79)^{-6}}{x^{-6}} = (-10)^{-6}$

x = _____

B) Use the laws of expone

1) $\dfrac{(-2)^{-9} \cdot (-10)^{0} \cdot 5^{-3}}{(-10)^{-4} \cdot (-2)^{-6}} = (-2)^{-x} \cdot 5^{y}$

_____

2) $\left(\dfrac{11}{10}\right)^{-8} \div \dfrac{100^{7}}{11^{-5}} = 11^{-x} \cdot 10^{-y}$

_____

Name : _____

Answer key

Exponents

Sheet 3

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

1) $\dfrac{(6.7)^{-17}}{(6.7)^{-x}} = (6.7)^{14}$

$x =$ **31**

2) $\dfrac{(-15)^{-18}}{x^{-7}} = (-15)^{-11}$

$x =$ **–15**

3) $x^{-3} \cdot 4^{-3} = 20^{-3}$

$x =$ **5**

4) $((-12)^{-4})^{x} = (-12)^{16}$

$x =$ **16**

5) $625^{-8} = 25^{-x}$

$x =$ **7.9**

7) $\dfrac{(-79)^{-6}}{x^{-6}} = (-10)^{-6}$

B) Use the laws of expone

1) $\dfrac{(-2)^{-9} \cdot (-10)^{0} \cdot 5^{-3}}{(-10)^{-4} \cdot (-2)^{-6}} = (-2)^{-x} \cdot 5^{y}$

$x = -1$ and $y = 1$

2) $\left(\dfrac{11}{10}\right)^{-8} \div \dfrac{100^{7}}{11^{-5}} = 11^{-x} \cdot 10^{-y}$

$x = 13$ and $y = 6$