

Exponents - Power of a Power Rule

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

1) $((6.1)^{-7})^3$

2) $\left(\left(\frac{7}{8}\right)^{10}\right)^{-4}$

3) $((-3)^{-6})^{-1}$

4) $(18^2)^{-6}$

5) $(2^{-11})^{-3}$

6) $((-7)^{-15})^5$

B) Find the value of x .

1) $\left(\left(-\frac{1}{5}\right)^{9x}\right) = \left(-\frac{1}{5}\right)^{27}$

 $x =$ _____

4) $(11^3)^{-x} = 11^{21}$

 $x =$ _____

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$x^5)^{-3} = (-5)^{-15}$

 $x =$ _____

$(-6)^2)^{-x} = (-6)^{-18}$

 $x =$ _____

C) 1) Find the value of x , if $((-9.4)^2)^{-x} = (-9.4)^{24}$.

i) -26

ii) 22

iii) -12

iv) 12

2) Which of the following equals $(19^0)^{-5}$?

i) 1

ii) 19^{-5}

iii) 19^5

iv) 19

Exponents - Power of a Power Rule

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

1) $((6.1)^{-7})^3$

 (6.1)⁻²¹

2) $\left(\left(\frac{7}{8}\right)^{10}\right)^{-4}$

 $\left(\frac{7}{8}\right)^{-40}$

3) $((-3)^{-6})^{-1}$

 (-3)⁶

4) $(18^2)^{-6}$

 18⁻¹²

5) $(2^{-11})^{-3}$

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6) $((-7)^{-15})^5$

 (-7)⁻⁷⁵

B) Find the value of x .

1) $\left(\left(-\frac{1}{5}\right)^{9x}\right) = \left(-\frac{1}{5}\right)^{27}$

$x =$ **3**

$x^5)^{-3} = (-5)^{-15}$

$x =$ **-5**

4) $(11^3)^{-x} = 11^{21}$

$x =$ **-7**

$(-6)^2)^{-x} = (-6)^{-18}$

$x =$ **9**

C) 1) Find the value of x , if $((-9.4)^2)^{-x} = (-9.4)^{24}$.

- i) -26 ii) 22 ~~iii) -12~~ iv) 12

2) Which of the following equals $(19^0)^{-5}$?

- ~~i) 1~~ ii) 19^{-5} iii) 19^5 iv) 19