Name : _____

Exponents - Power of a Power Rule

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

1) $\left(\left(-\dfrac{1}{3}\right)^{-2}\right)^{5}$

2) $(8^3)^{16}$

3) $((-2.3)^{-7})^2$

_____   _____   _____

4) $(5^{12})^{-3}$

5) $((-4)^{-5})^{-4}$

6) $\left(\left(\dfrac{5}{4}\right)^{4}\right)^{13}$

_____   _____   _____

B) Find the value of x.

1) $(6^x)^{-4} = 6^{-36}$

$\left(\left(\dfrac{3}{2}\right)^{x}\right)^{13} = \left(\dfrac{3}{2}\right)^{65}$

$x =$ _____

$x =$ _____

4) $(x^6)^7 = (7.9)^{42}$

$16^8)^{-x} = 16^{-16}$

$x =$ _____

$x =$ _____

C) 1) Which of the following equals $((-15)^{-3})^{-4}$?

i) $(-15)^{-28}$ ii) $(-15)^{-12}$ iii) $(-15)^{-7}$ iv) $(-15)^{12}$

2) Find the value of x, if $\left(\left(\dfrac{6}{7}\right)^{x}\right)^{-8} = \left(\dfrac{6}{7}\right)^{32}$.

i) 4   ii) −4   iii) −6   iv) 15