

exponential equation logarithm equation p-> Power 109# $log_b \stackrel{n}{\longrightarrow} = p$ $b \neq 1, b \stackrel{n}{\longrightarrow} n$ $n > 0 \stackrel{\text{must be}}{\longrightarrow} b$ N base

Convert from exponential equation to log equation $b^{P} = n \rightarrow \log_{0} n = p$ $5^{2} = 25$ $\log_{5} 25 = 2$ $3^{-2} = \frac{1}{9}$ $\log_{3} \frac{1}{9} = -2$ $bg_{3} \frac{1}{9} = -2$ $bg_{4} \frac{1}{2} = 2$ $\log_{4} 2 = \frac{1}{2}$ $bg_{3} \frac{2}{9} = 9$ $\log_{3} 9 = 2$

Convert from log equation to exponential equation

$$log_{4} 64 = 3$$

$$log_{4} 16 = 2$$

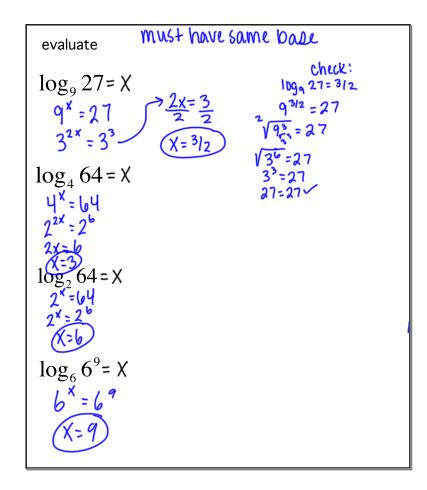
$$l^{2} = 04$$

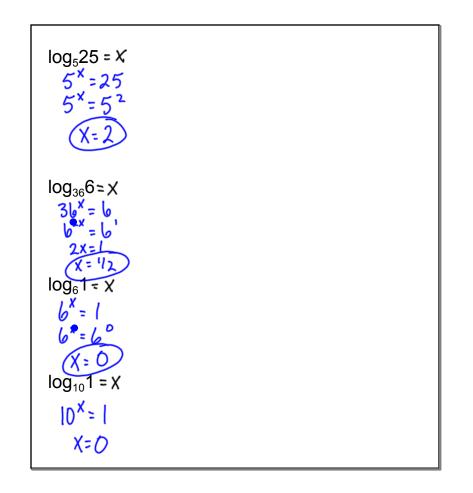
$$log_{8} \frac{1}{64} = -2$$

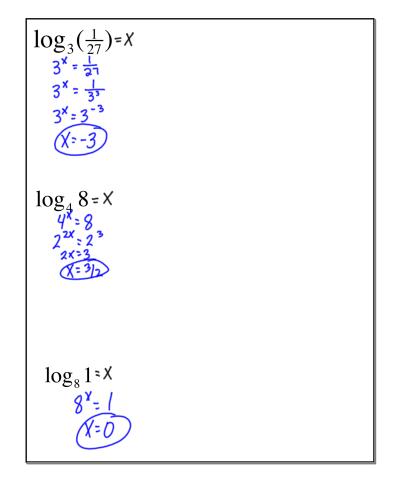
$$g^{-2} = \frac{1}{64}$$

$$log_{25} 5 = \frac{1}{2}$$

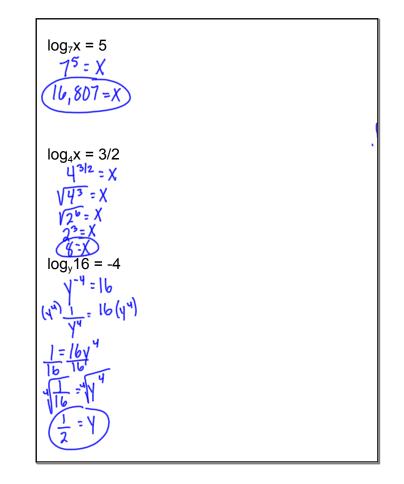
$$25^{1/2} = 5$$

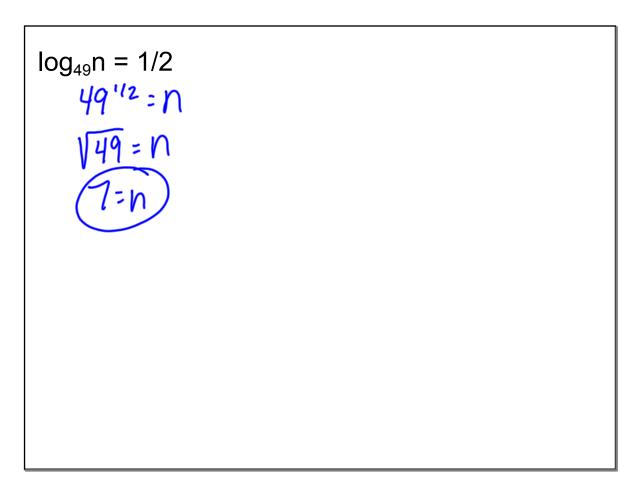






Solve $\log_{16} x = \frac{3}{2}$ $ _{0}^{3/2} = X$	
$\sqrt{16^3} = X$ $\sqrt{2^{4(3)}} = X$ $\sqrt{2^{12}} = X$	
2°=X 64=X	
$\log_a \frac{1}{8} = -3$	
$0^{-3} = \frac{1}{8}$ $0^{-3} = \frac{1}{2^3}$	1
a^{-3} : 2^{-3} When exponents same, based = a^{-3} : a^{-3}	
$\log_{2} 32 = 3x$ $2^{3x} = 32$ $2^{3x} = 2^{5}$	
$ \begin{array}{c} \chi = 5 \\ \chi = 5 \\ \chi$	





$$\log_{4x} 64 = 2$$

$$(4\chi)^{2} = 64$$

$$\lim_{X^{2} \in 4^{4}} \chi_{2}^{2} = \frac{64}{16}$$

$$\lim_{X^{2} \in 4^{4}} \chi_{2}^{2} \qquad \text{must be pos. 2 blc}$$

$$\lim_{X^{2} \in 4^{4}} \chi_{2}^{2} \qquad \text{nu neg base.#}$$

$$\log_{7}(x^{2} + 9) = 2$$

$$7^{2} = \chi^{2} + 9$$

$$49 = \chi^{2} + 9$$

$$49 = \chi^{2} + 9$$

$$\frac{-9}{140} = \frac{9}{140}$$

$$\frac{1}{2} (10 = \chi)$$

pg. 536 #22-38even, 48-56 even (check 2).
change <,> to =

$$\#22_126_130_134_38_1$$

 $48_150_152_156$