C12 - 8.3 - $\log a^m = m\log a$ Change of Base HW

Bring Exponent down in front and vice versa/both where allowed. Multiply/Distribute if necessary. Get rid of fractions and decimals.

$log6^3$ $log9^x$ $log5^{\frac{1}{3}}$ $log\sqrt{5}$ $\log\left(\frac{1}{3}\right)$ $\log 0.1$

$2log5^3$ $2log5^3$ $7log8^4$ $7log8^4$

$log2x^3$ $\log(2x)^3$ $logab^2$ $\log(ab)^2$

$2\log 3^{x-3}$ $2\log 3^{x-3}$ $log9^{x+1}$ $log3^{2x+5}$

Change Forms

$\frac{log8}{log2} =$ $\frac{\log_2 64}{log_2 4} =$ $\log_3 81 =$ $\log_5 25 =$

$\log_9 27 =$ $\log_{16} 64 =$ $\frac{1}{\log_{81} 3} =$ $\frac{1}{\log_{64} 4} =$

C12 - 8.3 - Rule 6 $\log_b^n a^n$ *HW*

Square the base and the log and evaluate

$\log_3 9$ $\log_2 4$ $\log_5 125$ $\log_7 49$

Take the base and the log to the exponent -1 *and evaluate*

$\log_{\frac{1}{2}} 8 =$ $\log_{\frac{1}{3}} 9 =$ $\log_{\frac{1}{4}} \frac{1}{2} =$ $\log_{\frac{1}{2}} \frac{1}{4} =$

Cube the base and the log

$\log_2 4 =$ $\log_3 4 =$

Change the base to 3

$\log_9 64 =$ $\log_{27} 8 =$ $\log_{\sqrt{3}} 2 =$

Change the base to 4

$\log_2 4 =$ $\log_{16} 25 =$ $\log_{\sqrt[3]{4}} 3 =$

C12 - 8.3 - Rule 6 $log_{b^n} a^n$ *Equations HW*

$\log_2 x + \log_4 x = 3$

$2\log_3 x - \log_9 x^2 = 2$

$(\log_2 x)(\log_3 4) = 4$

$(\log_x 36)(\log_6 27) = 6$

$(\log_5 16)(\log_4 25) = x$

$(\log_5 x)(\log_4 25)(\log_7 16) = 8$