Integrated Math 3. Chapter 13. Exponential and Logarithmic Equations **Name:**_____
13.1 Exponential and Logarithmic Forms. Homework Day 1 **Date:**_____ **Period:**_____

Solve for the unknown.

1.) $\log_7 343 = x$ $7^x = 343$ $7^x = 7^3$ $x = 3$	2.)$\log_{\frac{1}{4}} 64 = x$ $\left(\frac{1}{4}\right)^x = 64$ $(4^{-1})^x$ $4^{-1x} = 4^3$ $-1x = 3$ $x = -3$ $x = -3$
3.) $\log_x 1024 = 5$ $x^5 = 1024$ $x^5 = 4^5$ $x = 4$	4.)$\log_x \frac{1}{625} = -4$ $x^{-4} = \frac{1}{625}$ $x^{-4} = 5^{-4}$ $x = 5$
5.) $\log x = 6$ $10^6 = x$ $x = 1000000$	6.) $\log_{16} 4 = x$ $16^x = 4$ $4^{2x} = 4^1$ $2x = 1$ $x = \frac{1}{2}$
7.) $\log_x \sqrt[4]{8} = \frac{3}{4}$ $x^{3/4} = 8^{1/4}$ $x^{3/4} = (2^3)^{1/4}$ $x^{3/4} = 2^{3/4}$ $x = 2$	8.) $\log_{81} \frac{1}{9} = x$ $81^x = \frac{1}{9}$ $9^{2x} = 9^{-1}$ $-1 = 2x$ $x = -\frac{1}{2}$
9.) Write three logarithmic expressions that are equivalent to the given expression. $\log_5 125$ $\log_2 8$ $\log_3 27$ $\log_4 64$	