Advanced Functions – 4.2 WS: Exp and Log Functions Name: _____

I. State the translation(s), asymptote, domain, and range of each function using interval notation.

Given Exp/Log Function	Translation(s)	Asymptote	Domain	Range
1.) $f(x) = 3^x - 2$				
2.) $f(x) = \log_4 (x - 3)$				
3.) $f(x) = (½)^{x+4}$				
4.) $f(x) = \log (x) + 5$				
5.) $f(x) = e^{x-3} + 1$				
6.) $f(x) = \log_2 (x + 2) - 4$				
7.) $f(x) = \ln (x - 5) + 3$				
8.) $f(x) = 4^{x+1} - 3$				

II. Evaluate each expression or find the value of x. MUST SHOW WORK for credit!!

9.) $\log_2 x = 5$	10.) $\log_4 16 = x$	11.) $\log_x 81 = 4$	12.) $\log_5\left(\frac{1}{125}\right)$
13.) $\log_8\left(\frac{1}{4}\right) = x$	14.) $4^{2\log_4 6}$	15.) $e^{\frac{1}{2}\ln 9}$	16.) $\log_3 \sqrt{27}$
17.) $\log 2 + \log 5$	18.) $\log_2 \sqrt{\frac{1}{8}}$	19.) $\log_x 6 = \frac{1}{2}$	20.) $\ln\left(\frac{1}{\sqrt[3]{e}}\right)$
21.) $\log_{81} 9$	22.) $\log_4 192 - \log_4 3$	23.) $\log_2 4 + 3\log_2 2$	24.) $\log \sqrt[3]{100}$
25.) $2\log_5 25 - \log_5 125$	26.) $e^{\ln 6 - \ln 15 + \ln 20}$	27.) $\log_x 3 = \frac{1}{3}$	28.) $\left(\frac{1}{10}\right)^{4\log 5}$