PAP ALGEBRA II – HW Name _____

12.3/12.4 Solving Exponential & Log Equations

Solve the following. Do not use a calculator (leave your answers exact).

1. $\left(\frac{1}{8}\right)^x = 64$

2. $6\left(10^x\right) = 216$

3. $2^{x+3} = 256$

4. $3^{x-1} = \frac{1}{81}$

5. $\ln x - \ln 5 = 0$

6. $\ln(2x-1) = 5$

7. $\log_3 x + \log_3 4 = \frac{1}{4}\log_3 81$

8. $-1 + 2\ln 3x = 17$

9. $\log_4 x - \log_4(x-1) = \frac{1}{2}$

Solve the following. Use calculator to check your answer. Truncate your result to three decimal places.

10. $500e^{-x} = 300$

11. $7 - 2e^x = 5$

12. $5\left(2^{3-x}\right)-13=100$

13. $\log_6(3x)+\log_6(x-1)=3$

14. $\dfrac{\ln(x+19)}{\ln(7x-8)}=1$

15. $\ln 4x=2.1$

16. $\ln(x+5)=\ln(x-1)-\ln(x+1)$