Math 1513 - College Algebra

Discussion Board Week 7 - Due 2015.07.19

Use properties of logarithms and exponentials to solve for the variable in the equation. Do not use decimal approximations!

1. $\ln(5x) - \ln(2x-1) = \ln(4)$
2. $e^{3x-1}e^{2} = e^{-2x-1}$
3. $\log(x) = \sqrt{\log(x)}$
4. $\log_2(x+25) = 1 - \log_2(2x-7)$
5. $\ln(x+25) = -2 - \ln(2x-7)$
6. $2^{4x-5} = 3 \cdot 2^{3x-7}$
7. $e^{4x-5} = 3 \cdot \left(\frac{1}{e}\right)^{-3x+7}$
8. $e^{4x-5}e^{-2x+8} = 3e^{-3x+7}$
9. $\log(x) + \log(3x-13) = 1$
10. $\log_2(x) + \log_2(3x-13) = 2$
11. $\log(x^2) = (\log(x))^2$
12. $\log_3(\log_3(x)) = 1$
13. $\log_{\frac{1}{3}}(\log_{\frac{1}{3}}(x)) = -1$
14. $4^{2x-7} = 2^{3x+5}$
15. $4^{2x-7} = 32^{3x+3}$
16. $\log(x+14) - \log(x) = \log(x+6)$
17. $\log_3(x-4) + \log_3(x-7) = 2$
18. $\ln(5+x) + \ln(x-2) = \ln(2)$
19. $2^{x+1} = 3^{x-1}$
20. $5^{3x} = 3^{2x}$
21. $\log(x+1) = \log(5x) + \log(x-1)$
22. $\log_3(x+6) - \log_3(x) = \log_3(5)$
23. $\log(x) + \log(x+1) = \log(5)$
24. $2\ln(x) - \ln(2) = \ln(6+x)$
25. $\ln(x-1) + \ln(3) = \ln(4x)$