Math 1513 - College Algebra
Discussion Board Week 12 - Due 2015.04.12

Use properties of logarithms and exponentials to solve for the variable in the equation.

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. $\ln(x - 1) + \ln(3) = \ln(4x)$