

# Math 1513 - College Algebra

## Discussion Board Week 12 - Due 2014.11.09

---

Use properties of logarithms to solve for the unknown variable.

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