

## Practice Problems

**Solve the following equations:**

Remember that the arguments of all logarithms must be greater than 0. Also exponentials in the form of  $a^x$  will be greater than 0. Be sure to check all your answers in the original equation.

- $3^{x-1} = 81$
- $8^x = 4$
- $e^x = 5$
- $-14 + 3e^x = 11$
- $-6 + \ln 3x = 0$
- $\log(3x + 1) = 2$
- $\ln x - \ln 3 = 4$
- $2 \ln 3x = 4$
- $5^{x+2} = 4$
- $\ln(x + 2)^2 = 6$
- $4^{-3x} = 0.25$
- $2e^{2x} - 5e^x - 3 = 0$
- $\log_7 3 + \log_7 x = \log_7 32$
- $2 \log_6 4x = 0$
- $\log_2 x + \log_2(x - 3) = 2$
- $\log_2(x + 5) - \log_2(x - 2) = 3$
- $4 \ln(2x + 3) = 11$
- $\log x - \log 6 = 2 \log 4$
- $2^x = 64$
- $5^x = 25$
- $4^{x-3} = \frac{1}{16}$
- $3^{x-2} = 81$
- $\log_3 x = 5$
- $\log_4 x = 3$
- $\log_2 2x = \log_2 100$
- $\ln(x + 4) = \ln 7$
- $\log_3(2x + 1) = 2$
- $\log_5(x - 10) = 2$
- $3^x = 500$
- $8^x = 1000$
- $\ln x = 7.25$
- $\ln x = -0.5$
- $2e^{0.5x} = 45$
- $100e^{-0.6x} = 20$
- $12(1 - 4^x) = 18$
- $25(1 - e^t) = 12$
- $\log 2x = 1.5$
- $\log_2 2x = -0.65$
- $\frac{1}{3} \log_2 x + 5 = 7$
- $4 \log_5(x + 1) = 4.8$
- $\log_2 x + \log_2 3 = 3$
- $2 \log_4 x - \log_4(x - 1) = 1$

## Practice Problems Answers

1. 5

2.  $\frac{2}{3}$

3. 1.609

4. 2.120

5. 134.476

6. 33

7. 163.794

8. 2.463

9. -1.139

10. 18.086, -22.086

11.  $\frac{1}{3}$

12. 1.099

13.  $\frac{32}{3}$

14.  $\frac{1}{4}$

15. 4

16. 3

17. 6.321

18. 96

19. 6

20. 2

21. 1

22. 6

23. 243

24. 64

25. 50

26. 3

27. 4

28. 35

29. 5.66

30. 3.32

31. 1408.10

32. 0.61

33. 6.23

34. 2.68

35. No Solution

36. -0.65

37. 15.81

38. 0.32

39. 64

40. 5.90

41.  $\frac{8}{3}$

42. 2