

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.

1. $3^{x-1} = 81$

2. $8^x = 4$

3. $e^x = 5$

4. $-14 + 3e^x = 11$

5. $-6 + \ln 3x = 0$

6. $\log(3x + 1) = 2$

7. $\ln x - \ln 3 = 4$

8. $2 \ln 3x = 4$

9. $5^{x+2} = 4$

10. $\ln(x + 2)^2 = 6$

11. $4^{-3x} = 0.25$

12. $2e^{2x} - 5e^x - 3 = 0$

13. $\log_7 3 + \log_7 x = \log_7 32$

14. $2 \log_6 4x = 0$

15. $\log_2 x + \log_2(x - 3) = 2$

16. $\log_2(x + 5) - \log_2(x - 2) = 3$

17. $4 \ln(2x + 3) = 11$

18. $\log x - \log 6 = 2 \log 4$

19. $2^x = 64$

20. $5^x = 25$

21. $4^{x-3} = \frac{1}{16}$

22. $3^{x-2} = 81$

23. $\log_3 x = 5$

24. $\log_4 x = 3$

25. $\log_2 2x = \log_2 100$

26. $\ln(x + 4) = \ln 7$

27. $\log_3(2x + 1) = 2$

28. $\log_5(x - 10) = 2$

29. $3^x = 500$

30. $8^x = 1000$

31. $\ln x = 7.25$

32. $\ln x = -0.5$

33. $2e^{0.5x} = 45$

34. $100e^{-0.6x} = 20$

35. $12(1 - 4^x) = 18$

36. $25(1 - e^t) = 12$

37. $\log 2x = 1.5$

38. $\log_2 2x = -0.65$

39. $\frac{1}{3} \log_2 x + 5 = 7$

40. $4 \log_5(x + 1) = 4.8$

41. $\log_2 x + \log_2 3 = 3$

42. $2 \log_4 x - \log_4(x - 1) = 1$

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