

No Calculators Allowed

Directions: Solve the following equations. Leave your answers in exact form.

1. $3^x + 4 = 15$

2. $4^{x+3} - 7 = 2$

3. $15 = 21 - 3e^x$

4. $7^{2x} - 1 = 3$

5. $-3(2)^{x-1} + 10 = 1$

6. $9 = -5 + 2e^{x/5}$

7. $\log_2(x - 1) = 3$

8. $\log_5(2x - 1) = 2$

9. $\ln(3 - 4x) = 0$

10. $3\log_4(x) + 2 = -7$

11. $4 = \frac{\ln(x + 5)}{3}$

12. $5 - 3\log(3x + 2) = 2$

Directions: Use the log properties to help solve the following equations. Check for extraneous solutions.

13. $\log_3(2x - 1) - \log_3(x + 3) = \log_3(4)$

14. $\ln(3x - 1) + \ln(2) = \ln(11x + 13)$

15. $\log_2(x^2 - 4) = \log_2(6 - 3x)$

16. $\log_2(x) - 7 = \log_2 3$

17. $\log(4x + 3) + \log(5) = 2$

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

19. $\ln(x^2 + 3) = \ln(x + 2) + \ln 4$

20. $\log(x + 28) - \log(x + 3) = \log(x + 4)$