Homework: Exponential and Logarithmic Equations

In Problems 1-6, use equality of exponents to solve each problem.

1. $2^x = 32$	2. $3^{7x-1} = 9$
3. $16^{x-1} = 8$	4. $5^{5x-2} = \dfrac{1}{25}$
5. $8^{x+3} = \dfrac{1}{\sqrt[3]{2}}$	6. $e^{3x-2} = \dfrac{1}{e^3}$

In Problems 7-12, solve the exponential equation

7. $e^x = 3.1$	8. $2e^x + 1 = 25$
9. $e^{4x-1} = 212$	10. $4^{2x-3} = 13$
11. $2^{7x-1} = 4^{x+3}$	12. $e^{2x} + 7e^x - 18 = 0$

In Problems 13-23, solve the logarithmic equation

13. $\log_5 x = 2$	14. $\log_2(x-7) = 4$
15. $\log_3(x+1) = -2$	16. $3 + 5\ln x = 1$
17. $\log_6 x + \log_6(x+5) = 2$	18. $\log_3(x+5) - \log_3(x+2) = 1$
19. $\log_7(x-2) + \log_7(x-18) - \log_7(-x) = 1$	20. $\log(7x-1) = \log(x+2) + \log 5$
21. $\log(x+2) - \log 3 = \log(4x+3)$	22. $\log x + \log(x+4) = \log 32$
23. $\ln(x+1) - \ln(x-1) = \ln(x-8) - \ln(x+3)$	

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