APPLIED ALGEBRA 2

8.6 Homework-> Solving Exponential and Logarithmic Equations

Part 1: Solve each equation.

1. $10^{x-3} = 100^{4x-5}$

2. $3^{x-7} = 27^{2x}$

3. $25^{x-1} = 125^{4x}$

4. $36^{x-9} = 6^{2x}$

5. $8^{5x} = 16^{3x+4}$

6. $e^{-x} = 6$

7. $2^x = 15$

8. $1.2e^{-5x} + 2.6 = 3$

9. $4^x - 5 = 3$

10. $10^{2x} + 3 = 8$

11. $\frac{1}{4}(4)^{2x} + 1 = 5$

12. $\frac{2}{3}e^{4x} + \frac{1}{3} = 4$

13. $3^{0.1x} - 4 = 5$

14. $-16 + 0.2(10)^x = 35$

8.6 HOMEWORK

Part 2: Solve each equation. Check for extraneous solutions.

15. $\ln(4x+1) = \ln(2x+5)$

16. $log_2 x = -1$

17. $16 \ln x = 30$

18. $1 - 2\ln x = -4$

19. $log_5 (2x+15) = log_5 3x$

20. $\ln x + \ln(x+3) = 1$

21. $15 + 2log_2 x = 31$

22. $\log(5-3x) = \log(4x-9)$

23. $\ln(x+5) = \ln(x-1) - \ln(x+1)$

24. $2\ln(-x) + 7 = 14$

25. $10 \ln 100x - 3 = 117$

26. $log_8 (11-6x) = log_8 (1-x)$

27. $\ln(5.6 - x) = \ln(18.4 - 2.6x)$

28. $\frac{1}{2} log_6 16x = 3$