Solve each of the following equations without using a calculator. Show your process neatly organized.

1. $4^{(x-1)} = 32$

2. $9^{(2x-3)} = 81$

3. $3^{(5x+1)} = 9$

4. $8^{(2x-1)} = 4$

5. $\log_5 x = 3$

6. $\log_3 x = -1$

7. $\log_{25} x = .5$

8. $\log_4 x = -1.5$

9. $\log x = -3$

10. $\log x = 1$

Solve each of the following equations. Show your process neatly organized. Express your solutions rounded to the nearest hundredth. (You will need a calculator for these.)

11. $5^{(x+3)} = 1000$

12. $4^{(3x-2)} = 60$

13. $e^{(x+5)} = 50$

14. $e^{(x-1)} = 1.3$

15. $\text{Log}_3\, x = 3.1$

16. $\text{Log}_2\, x = -1.3$

17. $\text{Log}\, x = 1.3$

18. $\text{Log}\, x = -1.5$

19. $\ln x = 1.3$

20. $\ln x = -1.5$