Quiz Grade Logarithmic Review:

1. Convert to exponential form:$\log_3 \frac{1}{27} = -3$

2. Convert to logarithmic form:$2^6 = 64$

3. Evaluate the logarithm:$\log_{49} 343$

4. Evaluate the logarithm:$\log_2 \frac{1}{32}$

5. Solve the logarithmic equation: $\log_3(2x - 19) = 4$

6. Solve the logarithmic equation:$\log_2(x - 5) = 3$

7. Solve the logarithmic equation using natural logarithm:$17 - 5e^{3x} = -33$

8. Solve the logarithmic equation using base e: $\ln(x - 4) = 2$

9. The Dahl family wants to invest $\$6000$ into an account earning interest compounded continuously. At what interest rate would the Dahl family need if they desire to have an account balance of $\$18{,}000$ after an 18 year period?

10. Tino has $\$500$ to deposit. Which would earn him more interest, an account earning 5% interest compounded continuously for a 10 year period or an account earning 5% interest compounded quarterly for a five year period?

11. Find the time period of an investment that grew from an initial deposit of $\$1000$ into an account earning 6.5% interest compounded continuously, to a final account balance of

12. Find the account balance when $\$25{,}000$ is invested in an account earning 8.75% interest compounded continuously over a 3 year period.

13. Expand using properties of logarithms: $\log_5 19m^3n^8$

14. Expand using properties of logarithms: $\log_7 \frac{x}{8y^2}$

15. Condense using properties of logarithms: $\log_3 x + 4\log_3 y + \log_3 z$

16. Condense using properties of logarithms: $5\log_2 m - \log_2 13 + \log_2 x + \log_2 y$

17. Expand using properties of logarithms: $\log_7 \frac{f^2}{4}$

18. Condense using properties of logarithms: $\log 11 - 3\log x + 2\log y$

19. Solve the equation using properties of logarithms: $\log_5 4x + \log_5 x = \log_5 196$

20. Solve the equation using properties of logarithms: $\frac{2}{3}\log_7 125 - \log_7 x = \log_7 100$

21. Solve the equation using properties of logarithms: $\log(x + 18) - \log x = \log 7$

22. Solve the equation using properties of logarithms: $\log_3 x + \log_3(x + 5) = \log_3 24$

23. Solve using common logarithms: $4 + 7^{x-3} = 56$

24. Solve by finding a common base: $16^{x+1} = 64^{2x}$

25. Solve by finding a common base: $2^{3x-1} = 32$