Algebra II 300 **Log Equations Day 2**

Name_____ Date_____

Solve each equation.

1. $\log_3 2 + \log_3 7 = \log_3 x$

2. $\log_5 42 - \log_5 6 = \log_5 k$

3. $\log_5 m = \frac{1}{4}\log_5 625$

4. $\log y = \frac{1}{3}\log 8 + \frac{1}{2}\log 81$

5. $\log_9 5 + \log_9 (n+1) = \log_9 6n$

6. $3\log_5 x - \log_5 4 = \log_5 16$

7. $2\log_3 y + \log_3 0.1 = \log_3 5 + \log_3 2$

8. $\log_5 (2x-1) - \log_5 2 - \log_5 4 = \log_5 (x+1)$

9. $\log_6 48 - \log_6 \frac{16}{5} + \log_6 5 = \log_6 5x$

10. $\log_3 64 - \log_3 \frac{8}{3} + \log_3 2 = \log_3 4r$

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11. $\log_6\left(b^2+2\right)+\log_6 2=2$

12. $\log(3x-1)-\log(x+2)=1$

Review:

Use $\log_3 2\approx 0.631$ and $\log_3 7\approx 1.771$ to evaluate each expression.

13. $\log_3 49$

14. $\log_3 14$

15. $\log_3 \frac{14}{49}$

Write as a single logarithm.

16. $\log\left(xy^2\right)+2\log\frac{x}{y}-3\log\left(yx^{\frac{2}{3}}\right)$

Expand the logarithm.

17. $\log_3\left(\frac{z^2\sqrt[3]{x}}{6y^4}\right)$