Name_____ Date_____ Period_____

SOLVING LOGARITHM EQUATIONS WORKSHEET #1

Properties:

1. $\log_b 1 = 0$
2. $\log_b b = 1$
3. $\log_b b^x = x$
4. $\log_b x = \log_b y$ if and only if $x = y$
5. $\log_b (uv) = \log_b u + \log_b v$
6. $\log_b \left(\frac{u}{v}\right) = \log_b u - \log_b v$
7. $\log_b u^n = n \log_b u$

Solve & Check:

1. $\log_2(x+2) + \log_2 5 = 4$

2. $\log_6(x+1) + \log_6 x = 1$

3. $\log_4(x-4) + \log_4 x = \log_4 5$

4. $\log_4(2x+1) - \log_4(x-2) = 1$

5. $\log_3 x + \log_3(x-2) = 1$

6. $\log_2(x^2+8) = \log_2 x + \log_2 6$

7. $\log_6 x - \log_6(x-1) = \log_6 3$

8. $\log_7(x+1) + \log_7(x-5) = 1$

9. $\log_2(9x+5) - \log_2(x^2-1) = 2$

10. $\log(x+5)^2 - \log(x+5) = \log 2$

11. $\log x - \log(x-14) = \log 8$

12. $\log x + \log(x+2) = 0$

13. $\log_2(x^2-1) = \log_2 8$

14. $\log_a(x-2) + \log_a(2x-1) = 2\log_a x$

15. $\log(5x+3) - \log(x-1) = 2$

16. $2\log_2 x - \log_2 5 = \log_2 20$