

**Section 5 – 6: Solving Logarithmic Equations**

Name \_\_\_\_\_

**Solve for x.**

1.  $\log_4(3x-2) = 2$

2.  $\log_3(-4x+1) = 2$

3.  $\log_2(x^2-1) = 3$

4.  $\log_5(x^2-2x+10) = 2$

5.  $\log(x^2-x-19) = 0$

6.  $\log_3(6x^2+7x) = 1$

$$7. \frac{1}{2} \log_6(-5x+6) = 1$$

$$8. \frac{1}{3} \log_2(7x+8) = 2$$

$$9. \log_4(x+15) + \log_4 x = 2$$

$$10. \log_3 x + \log_3(x-6) = 3$$

$$11. \log_2(x-4) = 3 - \log_2(x+3)$$

$$12. \log_4(2x-3) = 2 - \log_4(2x+3)$$

$$13. \log_2\left(\frac{3x-10}{x}\right) = 3$$

$$14. \log_2 3x - \log_3(x+5) = 2$$

$$15. \log(7x+4) - \log(x-2) = 1$$

$$16. \log_2(5x+5) - \log_2(x-2) = 3$$

$$17. \log_5(6x-5) - \log_5(2x-1) = 1$$

$$18. \log_9(2x+6) - \log_9(2x) = \frac{1}{2}$$

$$19. \log_2(2x + 7) = \log_2(3x^2 + 12x - 1)$$

$$20. \log_2(8x^2 + 6x) = \log_2(-4x + 3)$$

$$21. \log_2 x + \log_2(x + 3) = \log_2 4$$

$$22. \log_5(4x) - \log_5(x - 2) = 2\log_5 3$$

$$23. \log_4(x - 5) + \log_4(x + 3) = \log_4(5x + 3)$$

$$24. \log_8 x + \log_8(x + 4) = \log_8 12$$