Name_____

Logarithmic Equations

Date_____ Period____

Solve each equation.

1) $\log 5x = \log (2x + 9)$

2) $\log (10 - 4x) = \log (10 - 3x)$

3) $\log (4p - 2) = \log (-5p + 5)$

4) $\log (4k - 5) = \log (2k - 1)$

5) $\log (-2a + 9) = \log (7 - 4a)$

6) $2 \log_7 -2r = 0$

7) $-10 + \log_3 (n + 3) = -10$

8) $-2 \log_5 7x = 2$

9) $\log -m + 2 = 4$

10) $-6 \log_3 (x - 3) = -24$

11) $\log_{12} (v^2 + 35) = \log_{12} (-12v - 1)$

12) $\log_9 (-11x + 2) = \log_9 (x^2 + 30)$

13) $\log(16+2b) = \log(b^2-4b)$

15) $\log x + \log 8 = 2$

16) $\log x - \log 2 = 1$

17) $\log 2 + \log x = 1$

18) $\log x + \log 7 = \log 37$

19) $\log_8 2 + \log_8 4x^2 = 1$

20) $\log_9(x+6) - \log_9 x = \log_9 2$

21) $\log_6(x+1) - \log_6 x = \log_6 29$

22) $\log_5 6 + \log_5 2x^2 = \log_5 48$

Name_____

Logarithmic Equations

Date_____ Period____

Solve each equation.

1) $\log 5x = \log (2x + 9)$

$\{3\}$

2) $\log (10 - 4x) = \log (10 - 3x)$

$\{0\}$

3) $\log (4p - 2) = \log (-5p + 5)$

$\left\{\frac{7}{9}\right\}$

4) $\log (4k - 5) = \log (2k - 1)$

$\{2\}$

5) $\log (-2a + 9) = \log (7 - 4a)$

$\{-1\}$

6) $2\log_7 -2r = 0$

$\left\{-\frac{1}{2}\right\}$

7) $-10 + \log_3 (n + 3) = -10$

$\{-2\}$

8) $-2\log_5 7x = 2$

$\left\{\frac{1}{35}\right\}$

9) $\log -m + 2 = 4$

$\{-100\}$

10) $-6\log_3 (x - 3) = -24$

$\{84\}$

11) $\log_{12} (v^2 + 35) = \log_{12} (-12v - 1)$

$\{-6\}$

12) $\log_9 (-11x + 2) = \log_9 (x^2 + 30)$

$\{-7, -4\}$

13) $\log (16 + 2b) = \log (b^2 - 4b)$

$\{8, -2\}$

15) $\log x + \log 8 = 2$

$\left\{\frac{25}{2}\right\}$

16) $\log x - \log 2 = 1$

$\{20\}$

17) $\log 2 + \log x = 1$

$\{5\}$

18) $\log x + \log 7 = \log 37$

$\left\{\frac{37}{7}\right\}$

19) $\log_8 2 + \log_8 4x^2 = 1$

$\{1, -1\}$

20) $\log_9 (x + 6) - \log_9 x = \log_9 2$

$\{6\}$

21) $\log_6 (x + 1) - \log_6 x = \log_6 29$

$\left\{\frac{1}{28}\right\}$

22) $\log_5 6 + \log_5 2x^2 = \log_5 48$

$\{2, -2\}$