Algebra 2 Name_____

Solving Logarithm Equations Worksheet

Solve each equation.

1) $9\log_9 v = 0$

2) $-\log_9 n = 1$

3) $-7 - 10\log_6 r = -27$

4) $7\log_5 x - 4 = 17$

5) $-4\log_6 -r = -4$

6) $-4 + \log_2 -8p = -3$

7) $4 - 8\log_7 2x = -28$

8) $6 + 3\log_5 (k - 6) = 15$

9) $9\log_3 (-5r - 3) = 36$

10) $\log_6 (9 - 7x) - 7 = -6$

11) $9\log_6 (2a + 1) + 6 = 33$

12) $-3 + 8\log_9 (3x + 7) = 29$

13) $\log_{15} (4 - p) = \log_{15} (-2p + 2)$

14) $\log_2 (-4x + 2) = \log_2 (5x + 2)$

15) $\log_{20} (-3x - 1) = \log_{20} (-4x - 4)$

16) $\log (4v + 10) = \log (10 - 5v)$

17) $\log_9 -3x - \log_9 10 = \log_9 13$

18) $\log_9 -3x - \log_9 3 = \log_9 35$

19) $\log_7 4x - \log_7 9 = 1$

20) $\log_7 9 + \log_7 (x + 3) = 2$

21) $\ln (x - 8) + \ln 3 = 5$

22) $\log (x + 4) + \log 3 = 2$

Algebra 2 Name_____

Solving Logarithm Equations Worksheet

Solve each equation.

1) $9\log_9 v = 0$

$\{1\}$

2) $-\log_9 n = 1$

$\left\{\frac{1}{9}\right\}$

3) $-7 - 10\log_6 r = -27$

$\{36\}$

4) $7\log_5 x - 4 = 17$

$\{125\}$

5) $-4\log_6 -r = -4$

$\{-6\}$

6) $-4 + \log_2 -8p = -3$

$\left\{-\frac{1}{4}\right\}$

7) $4 - 8\log_7 2x = -28$

$\left\{\frac{2401}{2}\right\}$

8) $6 + 3\log_5 (k - 6) = 15$

$\{131\}$

9) $9\log_3 (-5r - 3) = 36$

$\left\{-\frac{84}{5}\right\}$

10) $\log_6 (9 - 7x) - 7 = -6$

$\left\{\frac{3}{7}\right\}$

11) $9\log_6 (2a + 1) + 6 = 33$

$\left\{\frac{215}{2}\right\}$

12) $-3 + 8\log_9 (3x + 7) = 29$

$\left\{\frac{6554}{3}\right\}$

13) $\log_{15} (4 - p) = \log_{15} (-2p + 2)$

$\{-2\}$

14) $\log_2 (-4x + 2) = \log_2 (5x + 2)$

$\{0\}$

15) $\log_{20} (-3x - 1) = \log_{20} (-4x - 4)$

$\{-3\}$

16) $\log (4v + 10) = \log (10 - 5v)$

$\{0\}$

17) $\log_9 -3x - \log_9 10 = \log_9 13$

$\left\{-\frac{130}{3}\right\}$

18) $\log_9 -3x - \log_9 3 = \log_9 35$

$\{-35\}$

19) $\log_7 4x - \log_7 9 = 1$

$\left\{\frac{63}{4}\right\}$

20) $\log_7 9 + \log_7 (x + 3) = 2$

$\left\{\frac{22}{9}\right\}$

21) $\ln (x - 8) + \ln 3 = 5$

$\left\{\frac{e^5 + 24}{3}\right\}$

22) $\log (x + 4) + \log 3 = 2$

$\left\{\frac{88}{3}\right\}$