Name:

Date:

**Solving Logarithmic Equations**

**Solve each equation.**

1) $\log x - \log 4 = 3$

2) $-3 \log_3(x - 2) = -12$

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

4) $-\log_5 7x = 2$

5) $\log x + 5 = 2$

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

7) $2 \log_7 - 2x = 0$

8) $\log x + \log 2 = 4$

9) $\log 10 + \log x = 1$

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

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1) $\log x - \log 4 = 3$

{20}

2) $-3 \log_3(x - 2) = -12$

{84}

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

{8, −2}

4) $-\log_5 7x = 2$

$\{\frac{1}{35}\}$

5) $\log x + 5 = 2$

{− 100}

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

{− 6}

7) $2 \log_7 - 2x = 0$

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

8) $\log x + \log 2 = 4$

$\{\frac{25}{2}\}$

9) $\log 10 + \log x = 1$

{5}

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

$\{\frac{1}{28}\}$