

Solving Log Equations (version 2)

Date _____ Period _____

Solve each equation. Round your answers to the nearest ten-thousandth.

1) $\log_7 x + \log_7 8 = 2$

2) $\log_3 x + \log_3 8 = 2$

3) $\log_9 x + \log_9 7 = 1$

4) $\log_5 x + \log_5 8 = 1$

5) $\log_7 (x - 2) - \log_7 x = \log_7 63$

6) $\log_8 3 - \log_8 x = 1$

7) $\log_8 5 - \log_8 (x - 5) = \log_8 10$

8) $\log 4x - \log 5 = \log 27$

9) $\log_8 10 - \log_8 (x - 7) = 1$

10) $\log_5 (x + 1) + \log_5 10 = 4$

$$11) \log_5 6 - \log_5 (x + 5) = 1$$

$$12) \log_3 -5x - \log_3 7 = \log_3 13$$

$$13) \log_8 4 - \log_8 (x + 3) = 2$$

$$14) \log_9 (x + 6) - \log_9 (x - 1) = \log_9 40$$

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

$$16) \log_8 10 - \log_8 (9 - 5x) = 1$$

$$17) \log_9 (8 - x) + \log_9 4 = 1$$

$$18) \log_3 5 - \log_3 (3 - x) = 2$$

$$19) \log_2 (1 - 4x) - \log_2 6 = 4$$

$$20) \log_7 3 - \log_7 (4x - 8) = 1$$

Answers to Solving Log Equations (version 2)

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|-------------------|------------------|------------------|------------------|
| 1) $\{6.125\}$ | 2) $\{1.125\}$ | 3) $\{1.2857\}$ | 4) $\{0.625\}$ |
| 5) No solution. | 6) $\{0.375\}$ | 7) $\{5.5\}$ | 8) $\{33.75\}$ |
| 9) $\{8.25\}$ | 10) $\{61.5\}$ | 11) $\{-3.8\}$ | 12) $\{-18.2\}$ |
| 13) $\{-2.9375\}$ | 14) $\{1.1795\}$ | 15) $\{0.44\}$ | 16) $\{1.55\}$ |
| 17) $\{5.75\}$ | 18) $\{2.4444\}$ | 19) $\{-23.75\}$ | 20) $\{2.1071\}$ |