

Solving Logs Practice

Date _____ Period _____

Solve each equation.

1) $\log_{11} (4 - 2n) = \log_{11} (-5n - 5)$

2) $\log_{11} (4n - 1) = \log_{11} (-5n - 1)$

3) $\log_{14} 4p = \log_{14} (-3p + 7)$

4) $\log_{12} (3r - 5) = \log_{12} (5r - 7)$

5) $\log_3 (2 - a) = \log_3 -2a$

6) $\log_4 -5n = \log_4 n$

7) $\log_5 3 - \log_5 3x = 2$

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

9) $\log_9 2 + \log_9 (x + 3) = \log_9 79$

10) $\log_2 x + \log_2 (x + 6) = 4$

11) $\log_2 5x^2 - \log_2 9 = \log_2 50$

12) $\log_8 2 + \log_8 (x^2 + 1) = \log_8 12$

13) $343^{-x} = \frac{1}{7}$

14) $3^{2a-3} = 3^{2a}$

15) $2^{2x} = 8$

16) $2^{3m} = 2^{3m+2}$

17) $216^p = 36^p$

18) $216^{-x-3} = \frac{1}{6}$

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

19) $-5 \cdot 2^{6x} = -44$

20) $8e^{m+7} = 83$

21) $-6 \cdot 19^{-9x} = -23$

22) $15^{n-10} - 1 = 97$

23) $5^{k+10} + 7 = 78$

24) $-16^{n+10} = -42$

Solving Logs Practice

Solve each equation.

$$1) \log_{11} (4 - 2n) = \log_{11} (-5n - 5)$$

$$\{-3\}$$

$$3) \log_{14} 4p = \log_{14} (-3p + 7)$$

$$\{1\}$$

$$5) \log_3 (2 - a) = \log_3 -2a$$

$$\{-2\}$$

$$7) \log_5 3 - \log_5 3x = 2 \quad \left\{ \frac{1}{25} \right\}$$

$$9) \log_9 2 + \log_9 (x + 3) = \log_9 79 \quad \left\{ \frac{73}{2} \right\}$$

$$11) \log_2 5x^2 - \log_2 9 = \log_2 50$$

$$\{3\sqrt{10}, -3\sqrt{10}\}$$

$$13) 343^{-x} = \frac{1}{7} \quad \left\{ \frac{1}{3} \right\}$$

$$15) 2^{2x} = 8 \quad \left\{ \frac{3}{2} \right\}$$

$$17) 216^p = 36^p$$

$$\{0\}$$

$$2) \log_{11} (4n - 1) = \log_{11} (-5n - 1)$$

$$\text{No solution.}$$

$$4) \log_{12} (3r - 5) = \log_{12} (5r - 7)$$

$$\text{No solution.}$$

$$6) \log_4 -5n = \log_4 n$$

$$\text{No solution.}$$

$$8) \log_3 8 + \log_3 2x^2 = 2 \quad \left\{ \frac{3}{4}, -\frac{3}{4} \right\}$$

$$10) \log_2 x + \log_2 (x + 6) = 4$$

$$\{2\}$$

$$12) \log_8 2 + \log_8 (x^2 + 1) = \log_8 12$$

$$\{\sqrt{5}, -\sqrt{5}\}$$

$$14) 3^{2a-3} = 3^{2a}$$

$$\text{No solution.}$$

$$16) 2^{3m} = 2^{3m+2}$$

$$\text{No solution.}$$

$$18) 216^{-x-3} = \frac{1}{6} \quad \left\{ -\frac{8}{3} \right\}$$

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

$$19) -5 \cdot 2^{6x} = -44$$

$$0.5229$$

$$21) -6 \cdot 19^{-9x} = -23$$

$$-0.0507$$

$$23) 5^{k+10} + 7 = 78$$

$$-7.3514$$

$$20) 8e^{m+7} = 83$$

$$-4.6606$$

$$22) 15^{n-10} - 1 = 97$$

$$11.6931$$

$$24) -16^{n+10} = -42$$

$$-8.6519$$