

## Logarithmic Equations

**Solve each equation.**

1)  $\log(3x) = 9 - \log(2x6 + )$

2)  $\log(-4n + 7) = \log 3n$

3)  $\log n = \log 12$

4)  $\log(5x - 7) = \log(3x - 1)$

5)  $1 + \log_5 -9b = 4$

6)  $-7\log_4 -10r = -14$

7)  $4\log_{11}(r + 8) = 8$

8)  $\log_3(x + 1) - 5 = -5$

9)  $\log_{18}(3k^2 - 5k) = \log_{18}(-6 + 2k^2)$

10)  $\log_{14}(6v - 1) = \log_{14}(v^2 - 17)$

11)  $\log_{19}(7 - 3r^2) = \log_{19}(-2r^2 - 6r)$

12)  $\log_{14}(-32 - 3n) = \log_{14}(n^2 + 9n)$

## Logarithmic Equations

**Solve each equation.**

1)  $\log(3x - 9) = \log(2x + 6)$

 $\{15\}$ 

2)  $\log(-4n + 7) = \log 3n$

 $\{1\}$ 

3)  $\log n = \log 12$

 $\{12\}$ 

4)  $\log(5x - 7) = \log(3x - 1)$

 $\{3\}$ 

5)  $1 + \log_5 -9b = 4$

 $\left\{-\frac{125}{9}\right\}$ 

6)  $-7\log_4 -10r = -14$

 $\left\{-\frac{8}{5}\right\}$ 

7)  $4\log_{11}(r + 8) = 8$

 $\{113\}$ 

8)  $\log_3(x + 1) - 5 = -5$

 $\{0\}$ 

9)  $\log_{18}(3k^2 - 5k) = \log_{18}(-6 + 2k^2)$

 $\{2, 3\}$ 

10)  $\log_{14}(6v - 1) = \log_{14}(v^2 - 17)$

 $\{8\}$ 

11)  $\log_{19}(7 - 3r^2) = \log_{19}(-2r^2 - 6r)$

 $\{-1\}$ 

12)  $\log_{14}(-32 - 3n) = \log_{14}(n^2 + 9n)$

**No solution.**