

DIRECTIONS: Solve the exponential equations. Round the results to three decimal places if necessary.

1. $e^x = 18$

$x \approx 2.890$

2. $e^{2x} = 42$

$x \approx 1.869$

3. $2^x + 7 = 10$

$x \approx 1.585$

4. $2^{3x} = 4$

$x = \frac{2}{3}$ or $x \approx 0.667$

5. $3^{2x} - 3 = 4$

$x \approx 0.886$

6. $e^{4x} - 3 = 7$

$x \approx 0.576$

DIRECTIONS: Solve the logarithmic equations. Round the results to three decimal places if necessary.

7. $\log x = -2$

$x = \frac{1}{100}$ or $x = 0.010$

8. $7 \ln x = 21$

$x \approx 20.086$

9. $7 + \log x = 4$

$x = \frac{1}{1000}$ or $x = 0.001$

10. $4 - \ln x = 1$

$x \approx 20.086$

11. $3 \log x + 1 = 13$

$x = 10,000$

12. $\log_3 3x = 2$

$x = 3$