

Name:

**Section 5.4 – Solving Logarithms – Check for Extraneous Roots**

1. Solve:

$$\log(x + 3) + \log x = 1$$

2. Solve:

$$2 \log_3 x + \log_3(x - 1) = 1 + \log_3 2x$$

3. Solve:

$$\log_2(3x + 1) + \log_2(x - 1) = \log_2(10x + 14)$$

4. Solve:

$$\log_x 12 - \log_x(x - 1) = 1$$

5. Solve:

$$2\log(3 - x) = \log 2 + \log(22 - 2x)$$

6. Solve for  $x$

$$\log_3[\log_x(\log_2 8)] = -1$$

7. Solve:

$$\log_3(2 - 4x) - \log_3(3 - x) = 2$$