Logarithmic Equations; log = number

Algorithm

1. **Rewrite the equation as a single log**
2. **Raise the base to the number**
3. **Set that equal to the argument**
4. **Solve the resulting equation**
5. **Check your solution**

Determine the solution set over the Real Numbers

1. $\log x + \log 5 = 1$

2. $\log (9x) + \log x = 4$

3. $\log_3 x - \log_3 4 = 2$

4. $3\log_5 x - \log_5 x = 2$

5. $\log_7 (x + 1) + \log_7 (x - 5) = 1$

6. $\log_6 x + \log_6 (x - 9) = 2$

7. $2\log_2 x - \log_2 (x + 3) = 2$

8. $\log_4 (2x + 2) - \log_4 (x - 2) = 1$

Logarithms; log = log

Algorithm

1. **Rewrite the equation as a single log on each side**
2. **Drop the log notation**
3. **Set the arguments equal**
4. **Solve the resulting equation**
5. **Check your solution**

Find the solution set over the Real Numbers

1. $\log 6 + \log x = \log 12$

2. $\log_3(4x) + \log_3 5 = \log_3 40$

3. $\log_5 56 - \log_5 x = \log_5 7$

4. $\log 18 - \log (3x) = \log 2$

5. $\log_8 (x + 1) - \log_8 x = \log_8 4$

6. $3\log x = \log 64$