

Name: _____

Write each expression as the logarithm of one expression:

1. $\log_b 9c + \log_b 8c - \log_b 6c$

2. $\frac{1}{3}\log_4 2a + \frac{1}{3}\log_4 5b - 2\log_4 a - \log_4 b$

Evaluate:

3. $\log_7 4 + \log_7 \frac{1}{4}$

4. $3\log_{\frac{4}{9}} \sqrt[3]{\frac{27}{8}}$

Solve:

5. $\log_b (t^2 - 3t) - \log_b t = \log_b 3$

6. $\frac{1}{3}\log_4 x + \frac{1}{3}\log_4 (x+2) = \log_4 2$

7. $\log_6 (x-5) + \log_6 x = 2$

8. $\log_2 (9t+5) - \log_2 (t^2-1) = 2$

Answers:

1. $\log_b 12c$

2. $\log_4 \frac{100}{a^{10}b^4}$

3. $\log_7 1 = 0$

4. -1.5

5. $t = 6$

6. $x = 2$

7. $x = 9$

8. $x = 3$