

Unit 8 – Log Properties (Identify, Simplify)**State the property or properties used to rewrite each expression.**

1. $\log 6 - \log 3 = \log 2$

2. $\log_4 20 - 3 \log_4 X = \log_4 \frac{20}{x^3}$

3. $\log 3x = \log 3 + \log x$

4. $\log_5 3x + \log_5 12 - \log_5 3 = \log_5 12x$

Write each logarithmic expression as a single logarithm.

5. $\log_5 4 + \log_5 3$

6. $5 \log 2 - 2 \log 2$

7. $\log_2 4 + \log_2 2 - \log_2 8$

8. $5 \log_7 x - 2 \log_7 x$

Name _____ Hour _____

9. $\log_4 60 - \log_4 4 + \log_4 x$

10. $2 \log 4 + \log 2 + \log 2$

11. $\log_3 4x + 2 \log_3(5y)$

12. $(\log 3 - \log 4) - \log 2$