

Name: _____

Date: _____

Learning Goal 8.1Solving exponential and logarithmic equations with same base and with different bases, including base e .**More Questions**

Power Law	Product Law	Quotient Law
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1. Write each expression in terms of individual logarithms.

a. $\log_4 \frac{x}{yz}$

b. $\log_3 \left(\frac{9}{\sqrt[3]{x^2}} \right)$

2. Simplify using logarithm laws.

a. $\log_4 48 + \log_4 \left(\frac{2}{3} \right) + \log_4 8$

b. $\log_6 \sqrt{12} + \log_6 \sqrt{3}$

c. $n \log_b x + \log_b x^{4-n} - \log_b x^{2n+3}$

3. Given that $\log 2 = x$ and $\log 3 = y$, express each of the following in terms of x and y .

a. $\log 6$

b. $\log \left(\frac{4}{9} \right)$