

Name: _____

Date: _____

Learning Goal 0.2

Expectations for algebra from previous years.

More Questions

Power Law	Product Law	Quotient Law	Change of Base

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. Evaluate 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. $\log_{36} 2 - \log_{36} 12$

d. $2 \log_3 6 - \frac{1}{2} \log_3 64 + \log_3 2$

3. Write as a single logarithm.

a. $\frac{n \log_a x}{\log_a y}$

b. $\frac{\log_6 64}{\log_6 4}$

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

d. $\log_2(x^2 - 9) - \log_2(x^2 - x - 6)$

4. Solve for the exact value of x . State any restrictions on the variable and verify your answers.

a. $2^z = 2500$

b. $5^{x-3} = 1700$

c. $8(3^{2x}) = 568$

d. $6^{3x+1} = 8^{x+3}$

e. $4(7^{x+2}) = 9^{2x-3}$

f. $\log_7 x + \log_7 4 = \log_7 12$

g. $\log_2(x - 6) = 3 - \log_2(x - 4)$

h. $\log_3(x^2 - 8x)^5 = 10$

i. $\log_2(x + 3)^2 = 4$