

Properties of Logarithms

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<u>NAME OF PROPERTY</u>	<u>PROPERTY</u>	<u>EXAMPLE OF PROPERTY</u>
Product Property		
Quotient Property		
Power Property		

Example 1 Expanding Log Expressions

a. $\log_5 2x^6$

b. $\ln \frac{10}{\sqrt{x}}$

c. $\log_2 \frac{x^6 y}{z}$

d. $\log 2\sqrt[3]{x}$

Example 2: Condensing Log Expressions

a. $2\log_3 7 - 5\log_3 x$.

b. $\frac{1}{2}\log x + \log 4 - \log y$

c. $\frac{2}{3}\log_2 x - 3\log_2 y$

d. $3\ln x - 2\ln y - 4\ln z$

Solving – Review from yesterday

1. $\log x = -2$

2. $2^x + 7 = 10$

3. $e^{2x} = 42$

4. $\log_2 5x = 1$

5. $2 + \log_3 2x = -3$

4. $4(2^x) = 16$