

Properties of Logarithms

Things to know about the Properties of Logarithms

What is the property for a logarithm of an input that is multiplied?

What is the property for a logarithm of an input that is divided?

What is the property for a logarithm of a power?

What is the inverse property of logs/exponential functions?

Use the properties of logs to rewrite the following as a single logarithmic expression:

$$\ln(6x) + \frac{1}{2} \ln(x) - \ln(2x)$$

$$\log(5z) - \log(x) - 3 \log(3y) + \log(t)$$

$$2 \log_2(x^2) + \log_2(y) - 4 \log_2(P) - \frac{1}{3} \log_2(Q) + \log_2(z)$$

Use the properties of logarithms to expand each expression as much as possible:

$$\ln(10xe^3x)$$

$$\log\left(\frac{2x^4}{y\sqrt{z}}\right)$$

$$\log_5(\sqrt{5z})$$

Use the natural logarithm and a property of logarithms to solve: $4(3)^x = 20$.

Use property of logarithms to solve:

$$\log(-x-2) + \log(1-x) = 1$$

$$\log_3(3x+17) - \log_3(x+1) = 2$$