

Laws of Logarithms

Basic Rules

- (1) Multiplication inside the log can be turned into addition outside the log, and vice versa.

$$\log_b(mn) = \log_b(m) + \log_b(n)$$

- (2) Division inside the log can be turned into subtraction outside the log, and vice versa.

$$\log_b(m/n) = \log_b(m) - \log_b(n)$$

- (3) An exponent on everything inside a log can be moved out front as a multiplier, and vice versa.

$$\log_b(m^n) = n \times \log_b(m)$$