Since $\log_b x = y$ means $b^y = x$, a logarithm actually is an exponent. The properties of exponents apply!

* Product Rule: $\log_b (MN) = \log_b m + \log_b N$
  
  $\log$ of prod = sum of logs

* Quotient Rule: $\log_b \frac{M}{N} = \log_b m - \log_b N$
  
  $\log$ of quot. = diff of logs

* Power Rule: $\log_b m^p = p \log_b m$
  
  $\ln x^2 = 2 \ln x$
  
  $\log_b 7^4 = \frac{4}{\ln 7}$
  
  $\ln \sqrt{x} = \frac{1}{2} \ln x$
  
  $\log_b (xy)^5$

These properties also work when condensing:

1. $\log_b m + \log_b N = \log_b (MN)$
2. $\log_b m - \log_b N = \log_b \left(\frac{m}{N}\right)$
3. $p \log_b m = \log_b m^p$