

# Log Rules

1.  $\log_b(x \cdot y) = \log_b(x) + \log_b(y)$

2.  $\log_b\left(\frac{x}{y}\right) = \log_b(x) - \log_b(y)$

3.  $\log_b(x^y) = y \log_b(x)$

4.  $\log_b(x) = \frac{1}{\log_x(b)}$

5.  $\log_b(x) = \frac{\log_c(x)}{\log_c(b)}$

6.  $\log_b(1) = 0$

7.  $\log_b(b) = 1$