

# Math Formulas: Logarithm formulas

## Logarithm formulas

1.  $y = \log_a x \iff a^y = x \quad (a, x > 0, a \neq 1)$

2.  $\log_a 1 = 0$

3.  $\log_a a = 1$

4.  $\log_a(mn) = \log_a m + \log_a n$

5.  $\log_a \frac{m}{n} = \log_a m - \log_a n$

6.  $\log_a m^n = n \cdot \log_a m$

7.  $\log_a m = \log_b m \cdot \log_a b$

8.  $\log_a m = \frac{\log_b m}{\log_b a}$

9.  $\log_a b = \frac{a}{\log_b a}$

10.  $\log_a x = \frac{\ln a}{\ln x}$