

对数运算

· 对数运算公式

$$a > 0, a \neq 1, M > 0, N > 0 \quad n \in R$$

$$\log_a (M \cdot N) = \log_a M + \log_a N$$

$$\log_a (M/N) = \log_a M - \log_a N$$

$$\log_a M^n = n \log_a M \quad \log_{a^n} M = \frac{1}{n} \log_a M$$

$$a^{\log_a N} = N \quad \log_a a = 1 \quad \log_a 1 = 0$$

$$\log_a b \cdot \log_b a = 1 \quad (a > 0 \text{ 且 } a \neq 1, b > 0 \text{ 且 } b \neq 1)$$

$$\text{换底公式: } \log_a b = \frac{\log_c b}{\log_c a} = \frac{\ln b}{\ln a} \quad (a > 0 \text{ 且 } a \neq 1, c > 0 \text{ 且 } c \neq 1, b > 0)$$