

Logarithms

$$b^{\log_b(x)} = x$$

$$\log_a(xy) = \log_a(x) + \log_a(y)$$

$$\log_a(x/y) = \log_a(x) - \log_a(y)$$

$$\log_a(x^r) = r \log_a(x)$$

$$\log_a(a^r) = r$$

$$\log_a(x) = (\log_a(b))(\log_b(x))$$

$$\log_a(x) = \frac{\log_b(x)}{\log_b(a)}$$

$$\log_a(b) = \frac{1}{\log_b(a)}$$

$$a^{\log_b(c)} = c^{\log_b(a)}$$