

Product Property

$$\log_b m \cdot n = \log_b m + \log_b n$$

Power Property

$$\log_b m^x = x \cdot \log_b m$$

Quotient Property

$$\log_b \frac{m}{n} = \log_b m - \log_b n$$

Inverse Properties

$$\log_b b = 1 \quad \log_b 1 = 0$$

$$\log_b b^x = x \quad b^{\log_b x} = x$$

Product Property

$$\log_b m \cdot n = \log_b m + \log_b n$$

Expand

$$\log_3 2x$$

Condense

$$\log_9 6 + \log_9 y$$

Quotient Property

$$\log_b \frac{m}{n} = \log_b m - \log_b n$$

Expand

$$\log_5 \frac{x}{2}$$

Condense

$$\log_4 6 - \log_4 y$$

Power Property

$$\log_b m^x = x \cdot \log_b m$$

Expand

$$\log_2 x^4$$

Condense

$$5 \cdot \log_3 y$$

Inverse Properties

$$\log_b b = 1 \quad \log_b 1 = 0$$

$$\log_4 4 = 1 \quad \log_2 1 = 0$$

$$\log_b b^x = x \quad b^{\log_b x} = x$$

$$\log_4 4^3 \quad 2^{\log_2 5}$$

Product Property

$$\log_b m \cdot n = \log_b m + \log_b n$$

Power Property

$$\log_b m^x = x \cdot \log_b m$$

Quotient Property

$$\log_b \frac{m}{n} = \log_b m - \log_b n$$

Inverse Properties

$$\log_b b = 1 \quad \log_b 1 = 0$$

$$\log_b b^x = x \quad b^{\log_b x} = x$$