

Properties of Logarithms

Product Property

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

Power Property

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

Quotient Property

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

Special Log Properties

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

Inverse Properties

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

Product Property

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

Quotient Property

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

Power Property

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

Condense the following logarithmic expressions

$$\log_4 3 + 2 \cdot \log_4 x - \log_4 7 - 4 \cdot \log_4 y$$

Product Property

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

Quotient Property

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

Power Property

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

Condense the following logarithmic expressions

$$2 \cdot \log_5(x + 4) - \log_5 2 - 3 \cdot \log_5(x - 3)$$

Product Property

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

Quotient Property

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

Power Property

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

Condense the following logarithmic expressions

$$\frac{1}{2} \cdot \ln(x - 1) + 3 \ln 2 - 4 \cdot \ln(x + 2)$$

Product Property

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

Quotient Property

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

Power Property

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

Condense the following logarithmic expressions

$$\log (x^2 + 3x + 2) - 2 \log (x + 1)$$

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