

Homework – Properties of Logarithms

Expand the expression

$$1) \log_3 2x^4 \quad \log_3 2 + 4 \log_3 x$$

$$2) \ln \frac{3y}{\sqrt[4]{x}} \quad \ln 3 + \ln y - \frac{1}{4} \ln x$$

$$3) \log_2 \frac{(xy)^4}{z^2} \quad 4(\log_2 x + \log_2 y) - 2 \log_2 z$$

Condense the expression

$$4) \log 5 + \log x - 2 \log b \quad \log \frac{5x}{b^2}$$

$$5) \frac{1}{2} \log(x+5) - 2 \log x + \log y \quad \log \frac{\sqrt{x+5}}{x^2 y}$$