

Logarithmic & Exponential Worksheets

Expand each logarithm.

$$\log_5 \left(\frac{m}{s} \right)^4 =$$

$$\log_2 \left(\frac{n^5}{w^4} \right) =$$

$$\log_8 (a^3 b)^2 =$$

$$\log_4 \left(\frac{p^3 m}{n^2} \right) =$$

$$\log_9 \left(\frac{w^2 t^3}{rs^2} \right) =$$

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Expand each logarithm.

$$\log_5 \left(\frac{m}{s} \right)^4 = 4 \log_5 m - 4 \log_5 s$$

$$\log_2 \left(\frac{n^5}{w^4} \right) = 5 \log_2 n - 4 \log_2 w$$

$$\log_8 (a^3 b)^2 = 6 \log_8 a + 2 \log_8 b$$

$$\log_4 \left(\frac{p^3 m}{n^2} \right) = 3 \log_4 p + \log_4 m - 2 \log_4 n$$

$$\log_9 \left(\frac{w^2 t^3}{rs^2} \right) = 2 \log_9 w + 3 \log_9 t - \log_9 r - 2 \log_9 s$$