Precalculus

Compute logarithm using the rule $\log_a(b) - \log_a(c) = \log_a\left(\frac{b}{c}\right)$

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Use the properties of logarithms to evaluate the following.

Example

$$\log_4 2 + \log_4 32$$

Example

$$\log_2 80 - \log_2 5$$

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$$\log_4 2 + \log_4 32 \quad = \quad \log_4(2 \cdot 32)$$

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$$\begin{aligned} \log_4 2 + \log_4 32 &= \log_4(2 \cdot 32) \\ &= \log_4(64) \end{aligned}$$

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Use the properties of logarithms to evaluate the following.

Example

$$\begin{aligned} \log_4 2 + \log_4 32 &= \log_4(2 \cdot 32) \\ &= \log_4(64) \\ &= 3 \\ &\quad \text{(because } 4^3 = 64.\text{)} \end{aligned}$$

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$$\log_2 80 - \log_2 5 = \log_2 \left(\frac{80}{5} \right)$$

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$$\begin{aligned} \log_2 80 - \log_2 5 &= \log_2 \left(\frac{80}{5} \right) \\ &= \log_2(16) \end{aligned}$$

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